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# MONTANA WATER POLLUTION CONTROL PROGRAM PLAN

FOR

FISCAL YEAR 1976

Prepared by

WATER QUALITY BUREAU
ENVIRONMENTAL SCIENCES DIVISION
MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
HELENA, MONTANA 59601

June 15, 1975

DATE DUE

MSU NOV 5 '75

MSU FEB 4 '76

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## INTRODUCTION

The state's goals with regard to water pollution are set forth in Section 69-4801, R.C.M. 1947 of the state's water pollution control act, which states in part:

*(1) It is the public policy of this state to:*

*(a) conserve water by protecting, maintaining, and improving the quality and potability of water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation, and other beneficial uses;*

*(b) provide a comprehensive program for the prevention, abatement, and control of water pollution.*

The Montana water pollution control program is in response to two laws--Section 69-4801 through 69-4827 of the 1947 Revised Codes of Montana and P.L. 92-500 (Federal Water Pollution Control Act Amendments of 1972). Montana's program, at the present time, is geared to correction of the problems where there are presently feasible means of control. The present program is aimed mainly at control of point sources, whereas in future years, the greatest amount of resources will be centered on non-point sources of pollution. Both the state and federal laws place a hugh workload on the bureau and the Environmental Protection Agency (EPA) personnel; and for this reason, priorities for programs must be established, recognizing that everything cannot be done at once. The bureau and Region VIII EPA have attempted to reduce duplication of effort to a minimum. There is also the need to review and revise laws and regulations to reduce paperwork and still accomplish the goals of the Montana act and P.L. 92-500. Montana's program is, to a large part, dictated by P.L. 92-500. The program plan is an outline of the bureau's responsibilities, past program, and proposed program for fiscal year 1976 beginning July 1, 1975. A partial purpose of the program plan is to meet EPA's requirement for submittal to substantiate the use of federal funds. A major portion of the bureau's funding is obtained through EPA grants.

## MONTANA WATER QUALITY PROBLEMS

Estimated miles of Montana's streams degraded in each basin is shown in Table 1. Of the estimated 3,400 miles of streams degraded, only 250 miles are degraded by point source discharges and are, thus, effluent limited. Over three-quarters of these 250 miles will be corrected by construction measures which have already begun. Thus, 3,200 miles of Montana streams are being degraded by non-point sources and are water quality limited. Streams not listed in Table 1 are assumed to be effluent limited and to meet Montana water quality standards. Total mileage of Montana streams is not known.

Montana legislation defines natural as *conditions or material present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil and water conservation practices have been applied. Conditions resulting from dams at the effective date of this act are "natural."* The definition of natural requires that we have a definition of reasonable land, soil and water conservation measures before we can determine if pollution is occurring. This definition also requires that we have sufficient manpower to determine if, in fact, these practices are being employed.

Much of the sediment in the Clarks Fork of the Yellowstone and Muddy Creek, a tributary of the Sun River, is known to result from agricultural practices. Even in these two cases, it is not known how much results from unreasonable conservation practices. Many other streams also suffer from excessive sediment, and even less is known of the status of conservation measures in these cases. The same considerations apply to problems arising from temperature increases, dewatering, salt increases, as well as nutrient concentrations.

About 150 miles of Montana streams are degraded by mining waste. Of these, 80 miles are below Butte and result from a deposition of mining and milling wastes in and adjacent to the stream channel. Input of wastes has substantially stopped, but many years will be required for the streams to completely recover. At present, there are no practical means available to restore streams damaged by mining wastes.

Industrial waste dischargers, for the most part, will need minor improvements to meet best practicable treatment requirements established by the water pollution control act, and no great problem in meeting these requirements is foreseen. Only 35 miles of Montana streams are being degraded by industrial wastes.

Municipal discharges only impact about 220 miles of streams. The majority of these will be corrected when present construction is completed. There are many other municipal dischargers which do not meet the provisions of the act, particularly the provision for chlorination. However, in view of the minimal impact of coliforms and the unknown but potentially large effects on the aquatic ecosystems and human health, the requirement for chlorination of all municipal discharges should be more closely examined.

Supersaturation of dissolved gases has greatly reduced fish populations in the Kootenai River below Libby Dam. The gases are entrapped in the waters of the overflow of the dam. Similar problems exist on the dams from the Lower Clark Fork River. However, by definition, these are natural conditions; therefore, the water quality legislation should be changed to minimize these impacts.

The coal field developments in eastern Montana are of considerable immediate concern. The concern is mainly with the potential for dewatering problems. There is also potential for sediment and groundwater pollution.

As discharge requirements to surface waters become more strict, the potential for pollution of underground waters and air increases. Ways must be found to ensure that we do not transfer our surface water pollution to our underground waters or to our air.

Possibly the greatest potential for groundwater damage in Montana is due to saline seep. There is also a substantial potential for surface water pollution from saline seep. A sampling and analysis program will continue in fiscal year 1976. This program is designed to determine the effects and extent of saline seep in Montana and to establish baseline chemical data.

The state's greatest challenge is to prevent degradation of waters which exceed the water quality standards.

TABLE 1

ESTIMATED MILES OF MONTANA STREAMS DEGRADED IN EACH BASIN
BY CAUSES AND TOTAL FOR EACH BASIN

| | SEDIMENT | TEMPERATURE | DEWATERING | SALTS | NUTRIENTS | COLIFORMS | LOW DISSOLVED OXYGEN | ACID MINE WATER AND TOXIC METALS | OIL & GREASE, PHENOLS, AND COLOR | ARSENIC AND FLUORIDE FROM YNP | MISCELLANEOUS | TOTAL MILES DEGRADED IN THE BASIN | TOTAL MILES DEGRADED IN THE BASIN BY POINT-SOURCE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UPPER MISSOURI | 500* | 128* | 128* | | 20*? | 1<br>40* | | 20 | | 126 | | 810 | 20 |
| MISSOURI-SUN-SMITH | 170* | 20* | 60* | | 12* | 2<br>80* | | 55 | | | | 380 | 75 |
| MARIAS | 216* | 186* | 261* | 125* | | 9 | | | 7 | | 6 ($NH_3$ from sewage) | 440 | 22 |
| MIDDLE MISSOURI | 180* | | | 195* | 60* | 11* | | | | | | 230 | 0 |
| MILK | 42* | | | | | 3<br>104* | 24 | | | | | 150 | <80 |
| LOWER MISSOURI | | | | 250* | | 70* | | | | | | 250 | 0 |
| MUSSELSHELL | 300* | 300* | 300* | 300* | 300* | 4<br>3* | | | | | | 300 | 3 |
| UPPER YELLOWSTONE | 80 | | | | | 25* | | | 25* | 61 | | 170 | ? |
| MIDDLE YELLOWSTONE | 150* | | | 86* | | | | | | | | 150 | 0 |
| LOWER YELLOWSTONE | ? | | | | | | | | | | | | 0 |
| LITTLE MISSOURI | | | | | | ? | | | | | | | |

| | SEDIMENT | TEMPERATURE | DEWATERING | SALTS | NUTRIENTS | COLIFORMS | LOW DISSOLVED OXYGEN | ACID MINE WATER AND TOXIC METALS | OIL & GREASE, PHENOLS, COLOR | ARSENIC AND FLUORIDE FROM VNP | MISCELLANEOUS | TOTAL MILES DEGRADED IN THE BASIN | TOTAL MILES DEGRADED IN THE BASIN BY POINT-SOURCE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UPPER CLARK FORK | 75* | | 110* | | 60* | | | 84* | | | | 280 | |
| LOWER CLARK FORK | 68* | | | | | 20* | | | 4 | | 2 ($N_2$ from dams) | 155 | 43 |
| FLATHEAD | 50 | | | | 30* | 5<br>50* | | | | | 5(flow & $T^{O}$ fluct. from dam) | 110 | 8 |
| KOOTENAI | 12* | | | | | | | | | | 50 ($N_2$ from Libby Dam) | 60 | 0 |
| TOTAL | 1,830 | 630 | 830 | 960 | 480 | 410 | 24 | 160 | 35 | 187 | 63 | 3,400 | 250 |

* indicates overlap of degradation causes

1. Construction has started which should correct 15 miles.
2. Construction has started which should correct 76 miles.
3. Construction has started which should correct 80 miles.
4. Construction has started which should correct 3 miles.
5. Construction has started which should correct 30 miles.

200 miles

## WATER QUALITY STANDARDS

1. State Legislation

Section 69-4808.2, R.C.M. 1947 outlines the duties of the Board of Health and Environmental Sciences with respect to Montana's water pollution control laws. The first portion of subsection (1) of Section 69-4808.2 states:

*The board shall:*

*(a) Establish and modify the classifications of all water in accordance with their present and future most beneficial uses.*

*(b) Formulate standards of water purity and classification of water according to its most beneficial uses giving consideration to the economics of waste treatment and prevention.*

*(c) Review from time to time, at intervals of not more than three (3) years, established classifications of waters and standards of water purity and classification; and*

*(ii) in revising classifications or standards or in adopting new classifications or standards, the board may not so formulate standards of water purity or classify any state waters as to lower any water quality standard applicable to state water below the level applicable under the classification or standards adopted by the state water pollution control council under Section 69-4813.*

*(iii) The board shall require that any state waters whose existing quality is better than the established standards as of the date on which the standards become effective be maintained at that high quality unless it has been affirmatively demonstrated to the board that the change is justifiable as a result of*

*necessary economic or social development and will not preclude present and anticipated use of these waters; and*

*(iv) The board shall require any industrial, public, or private project or development which would constitute a new source of pollution or an increased source of pollution to high quality waters, referred to in subsection (1)(c)(iii), to provide the degree of waste treatment necessary to maintain that existing high water quality.*

2. Review of Past Program

MAC 16-2.14(10)-S14480 WATER QUALITY STANDARDS is an administrative rule adopted by the Board of Health and Environmental Sciences which contains water-use classifications for all of Montana's surface waters and the water-use descriptions and water quality criteria for each classification. The water quality criteria contained in the standards define the minimum water quality conditions and waste treatment requirements needed in order to protect, maintain, and improve the quality and potability of the state's surface water. The water-use descriptions and water quality criteria for nearly all of Montana's rivers and streams provide protection of the quality of the surface water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation, and other beneficial uses.

The first water quality criteria and stream-use classifications were adopted following the enactment of Montana's first comprehensive water pollution control law in 1955. The original water quality standards were reviewed and revised in 1967 in accordance with requirements established by the Federal Water Quality Act of 1965. An anti-degradation clause was added to the water quality standards during this revision, and this anti-degradation policy was subsequently included as part of the state law by the 1971 legislature. The Federal Water Pollution Control Act Amendments of 1972 also require states and the Environmental Protection Agency to extensively review water quality standards and make necessary changes. The changes required in Montana's water quality standards were adopted by the Board of Health and Environmental Sciences on July 13, 1973, and became effective on November 4, 1973. After the 1973 standards were in use

for a short time, several errors were detected which needed to be corrected. These corrections were made by the Board of Health and Environmental Sciences in July, 1974, following a public hearing, and the revised water quality standards became effective in September of 1974.

3. Strategy

For the past two fiscal years, the Water Quality Bureau has spent a great deal of time reviewing and revising Montana's water quality standards. Very little additional work or review is planned during fiscal year 1976. We will continue to gather information and water quality data on our surface streams which will greatly assist us in revisions needing consideration during fiscal year 1978 when a comprehensive evaluation will be undertaken by the department. Water quality data and water-use information obtained during fiscal years 1976 and 1977 will be reviewed and compared with the existing standards to determine what modifications and/or additions are needed. At least one public hearing will be included in the evaluation process. A formal review and adoption of revised standards, if needed, will be accomplished by September of 1977.

During fiscal year 1976, a policy statement on non-degradation will be developed. Following development of this statement, it will be reviewed by the advisory council, submitted to public hearing, and presented to the Board of Health for adoption. It is not known if the complete process can be completed during the fiscal year.

## MUNICIPAL FACILITIES CONSTRUCTION, OPERATION AND MAINTENANCE AND OPERATOR CERTIFICATION

1. Review of Past Program

A minimum requirement of primary treatment for all domestic sewage was first adopted by the Board of Health in 1952. Smaller communities, for the most part, constructed sewage lagoons which easily met the requirements of primary treatment, and in many cases, met the requirements of secondary treatment (the minimum treatment established in 1967). Definite effluent limitations were established by EPA regulations during fiscal year 1973.

Some of the municipalities with lagoons presently need improvements to meet these limitations. The larger cities, for the most part, have constructed mechanical treatment facilities. Some of these have been upgraded to secondary, and the remainder are in the process of constructing or planning secondary treatment.

Since 1956, there has been a federal grant program to assist municipalities in the construction of sewage treatment facilities which included outfall and interceptor sewers. In 1971, the state legislature appropriated $4,000,000 to aid the municipalities in construction of these same facilities. The 1973 legislature appropriated $1,600,000 to reimburse municipalities that had proceeded with construction since July 1, 1966, without waiting for state grants. Because of changes in funding percentage by the federal government, state grants for new projects have been discontinued. Since passage of the federal amendments in 1972, the federal grant program provides 75 percent of the eligible project costs. Separation of storm and sanitary sewers, sewers to serve existing areas, and reduction of infiltration water are now also included as eligible items. Because of the shortage of federal grant funds, a priority system for fund allocation must be used. The state, under EPA guidance, establishes priorities for proposed projects. The state's allocation of federal grant funds is presently based on the ratio of the state's needs to nationwide needs.

Nine billion dollars have been distributed among the states for construction of water pollution control facilities based on each state's need. Of the total, Montana received $3,324,000 in fiscal year 1973, $4,986,000 in fiscal year 1974, and $4,534,600 in fiscal year 1975. The remaining $9 billion is scheduled for release in fiscal year 1976, with Montana's share estimated at $12.3 million.

Using this priority system, a priority list containing all projects voicing a need is developed at least annually. Grant monies are then obligated to the top communities on the list until the annual allocation is expended.

Montana's needs based on 1973 dollars for sewers and treatment are estimated as follows:

| | |
|---|---|
| Upgrading to secondary treatment . . | $40,000,000 |
| Treatment beyond secondary to meet water quality standards . . . | 18,000,000 |
| Correction of infiltration/inflow sewer problems . . . . . | 4,000,000 |
| Major rehabilitation of existing sewers . . . . . | 2,000,000 |
| New collector sewers . . . . . | 22,000,000 |
| New interceptor sewers . . . . . | 35,000,000 |
| Separation of storm-sanitary sewers | 8,000,000 |
| TOTAL | $129,000,000 |

The above figures do not include storm sewers for which we do not have a good estimate available. With the probable $12,300,000 in grants that will be available in fiscal year 1976, it can be seen that there are many years of construction that will be needed beyond fiscal year 1976. Montana's priority system considers treatment to be of the highest priority except in cases where there is an extreme public health hazard involved with a particular sewer system or the lack of a collection system.

For projects using fiscal year 1975 and later funds, the grant process is divided into three steps. Step 1, called facilities planning or Section 201 planning, is a detailed planning effort aimed at providing a recommended solution to the particular problems of the community in question. Included in this plan is an analysis of the existing sewer system and treatment facility, a probe of the town's anticipated development and growth trends, a comparison of the economics and effectiveness of all available treatment alternatives,

and an environmental assessment of the alternative solutions. Finally by compiling all of the above information and comparing advantages and disadvantages, a recommended solution is given. If the plan receives the approval of the reviewing governmental agencies, the grant may be amended to provide for Step 2 expenses.

Step 2 concerns itself with the actual design or preparation of plans and specifications of the selected treatment system. Following governmental review and approval of the plans and specifications, the grant may be amended again to provide for Step 3 expenses. The majority of the project costs are associated with this step--construction. Eligible costs in all three steps are funded 75 percent by the Environmental Protection Agency.

In addition to these three steps, a specialized Step 2/3 sewer rehabilitation grant will be made in selected cases. This grant will provide funding for communities with excessive infiltration/inflow problems. The function of this grant is to fund preparation of plans and specifications for sewer rehabilitation as well as actual construction work associated with this aspect of the project. Normally, this grant will be made after completion of the facilities plan (Step 1) and before design of the treatment works (Step 2).

Public participation is encouraged throughout the grant process. Public hearings are held before each priority list revisions enabling those with suggested changes to be heard. Hearings and meetings throughout the facilities planning stage ensure that the public interest is being served. Ultimately, the citizens affected will decide whether or not to support the entire project with their tax dollars.

The Water Quality Bureau is involved with the communities and project consulting engineers throughout the life of these projects. Each year's priority list and estimated cost requirements are determined by this office. After selecting the communities to receive grant assistance, we meet directly with town councils and their consultants to explain the program and the application procedure. The bureau is actively involved through the Step 1 phase, offering assistance when possible and reviewing and approving the final plan prior to its adoption.

In 1974, the bureau was given the authority from EPA to review and approve plans and specifications for construction grant projects. Throughout Step 3, our duties include monitoring cash flow to the projects, reviewing

and approving contract change orders, and making construction inspections. Following project completion, the bureau reviews and approves operation and maintenance manuals to ensure that the many dollars invested will not be wasted because of inadequate operational control by the communities. The bureau hopes to assume the responsibility for formal reviews for facility planning from the EPA this year.

During fiscal year 1975, 13 new or upgraded municipal wastewater treatment plants were put in operation. These are shown in Table 2.

TABLE 2. WASTEWATER TREATMENT PROJECTS COMPLETED DURING FISCAL YEAR 1975

| Community | Treatment Project |
|---|---|
| Alberton | Upgrading of secondary facility. |
| Belgrade | New non-discharging facility. |
| Crow Agency | Addition of physical-chemical treatment for industrial wastewaters and some sewage. |
| Flaxville | New sewage treatment facilities constructed in conjunction with new sewerage system. |
| Glasgow | Addition of aerated lagoon to assist in meeting secondary treatment requirements. |
| Havre | Construction of new secondary treatment facility. |
| Helena | Construction of new secondary treatment facility. |
| Highwood | New sewage treatment facilities construction in conjunction with new sewerage system. |
| Hinsdale | Construction of new mechanical secondary treatment facility. |
| Kalispell | Construction of new secondary treatment facility. |
| Vaughn | Construction of new aerated lagoon system. |

| Community | Treatment Project |
|---|---|
| West Yellowstone | Improvements to existing secondary treatment facility. |
| Yellow Bay | Construction of secondary and tertiary treatment facilities. |

An integral part of municipal sewage treatment is adequate operation and maintenance of the facilities after construction is completed. In an effort to improve operation and maintenance, the bureau, in cooperation with Montana State University at Bozeman, has conducted a school each year. During recent years, this school has been extended from two and one-half days to five days. About 80 operators attend each year.

In addition, classroom instruction was provided to operators in selected areas, and on-the-job training was provided in conjunction with a special federal grant program provided specifically for this purpose since 1971. These federal training grants expired during fiscal year 1975. Assistance also was provided to operators when requests were received.

As a trial program in fiscal year 1974 and fiscal year 1975, video-tape programs were started at Billings, Kalispell, and Missoula in cooperation with city operating personnel. These cities have selected a training leader from their own staff to guide their program. Also during fiscal year 1975, a special tape-slide program was started. This is to assist operators in isolated locations where other programs are not available to them.

An operator certification program was established in 1968 following enactment of a law requiring certification of those in responsible charge of a public water distribution systems, water supply system, sewage treatment, or industrial waste treatment system. Those in charge on July 1, 1967, could receive certification without a written examination. The new operators must be certified by examination.

2. Strategy

(a) Construction Grants

The Montana priority system for fiscal year 1976 for EPA construction grants is attached as Appendix A. The total listing of municipalities requesting to be placed on the priority list is shown as Appendix B.

The bureau hopes to receive approval from EPA during fiscal year 1976 for the administration of the facility planning (Step 1) program. Assumption of this task will reduce duplication of effort which exists on this program as both agencies presently review facility plans. It is felt that the single review process will expedite completion of facility plans and provide a more cost effective program.

The bureau has established the following goals for construction grant projects:

(i) More expeditious award of grants to the communities.

(ii) More orderly and efficient progression through Steps 1, 2, and 3.

(iii) More contact with the communities and consultants throughout the project, including pre-application and pre-design conferences.

(iv) Construction inspections.

(v) Plant startup and operation and maintenance visits to assist with operation problems.

Approximately 50 communities may benefit from our efforts in fiscal year 1976. A summary of fiscal year 1976 construction grant activities is shown in Table 3.

TABLE 3. FY 1976 CONSTRUCTION GRANT ACTIVITIES

PROBABLE FY 1976 CONSTRUCTION GRANT OFFERS

| Step | Number | Amount |
|---|---|---|
| Step 1 | 17 | $ 193,800 |
| Step 2 | 18 | 661,000 |
| Step 2/3--Sewer Rehabilitation | 11 | 495,000 |
| Step 3 | 11 | 9,795,000 |

PLANS AND SPECIFICATIONS REVIEW FOR CONSTRUCTION GRANTS

| | Achieved FY 1975 | Planned FY 1976 |
|---|---|---|
| Review | 6 | 16 |

OPERATION AND MAINTENANCE MANUAL REVIEW FOR CONSTRUCTION GRANTS

| | Achieved FY 1975 | Planned FY 1976 |
|---|---|---|
| Review | 10 | 9 |

Interim inspection of construction grant projects (Step 3) will be made in conjunction with other operation and maintenance and compliance inspections as personnel perform their other duties.

Shown in Table 4 is the estimated scheduling to be followed in fiscal year 1976 and fiscal year 1977. Table 5 provides a listing of new projects which are expected to be funded during this fiscal year.

STATE OF MONTANA

TABLE 4. SCHEDULE OF CONSTRUCTION GRANT OBLIGATIONS

FY 1976 FUNDS

($1,000's)

| GRANT NO. & STEP | APPLICANT NAME | FY 1976 QUARTER | | | | FY 1977 QUARTER** | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| C 300195 | Three Forks | | 23.5(Step 2) | | 140 (Step 3) | | | | | 163.5 |
| C 300201 | Great Falls | 4TH QUARTER FY75 3,860(Step 3) | | | | | | | | 3,860. |
| C 300221 | Butte | | 125 (Step 2) | | 2,350(Step 3) | | | | | 2,475. |
| C 300240 | Corvallis | 5(Step 1) | | | 15(Step 2) | 250(Step 3) | | | | 270. |
| C 300202 | Victor | | 15 (Step 2) | | 300(Step 3) | | | | | 315. |
| C 300203 | Miles City | | | | | | 37.5(Step 2) | | 300 (Step 3) | 337.5 |
| C 300204 | Poplar | | 30 (Step 2) | | 285(Step 3) | | | | | 315. |
| C 300205 | Billings 6th Ave. Int. | | 30 (Step 2) | | 150(Step 3) | | | | | 180. |
| C 300206 | Whitefish | | 25(Step 2/3 rehabilitation) | | 50(Step 2) | 1,075(Step 3) | | | | 1,150. |
| C 300241 | Columbia Falls | *15(Step 1, 208 funding) | | | | | | | | 0 |
| C 300242 | Polson | *15(Step 1, 208 funding) | | | | | | | 20 (Step 2) | 20. |
| C 300206 | Gall. Co. RID 305 | | 12.5(Step 2) | | 100(Step 3) | | | | | 112.5 |
| C 300208 | Bozeman | | 75(Step 2/3 rehabilitation) | | 125(Step 2) | 4,000(Step 3) | | | | 4,200. |
| C 300243 | Anaconda-Opportunity | 22.5(Step 1) | | | | | | 77.5(Step 2) | | 100. |
| C 300209 | Bigfork | | 50(Step 2/3 rehabilitation) | | | | | | | 50. |
| C 300210 | Livingston | 100(Step 2/3 rehabilitation) | | 40 (Step 2) | 1,760(Step 3) | | | | | 1,500. |
| C 300211 | Dillon | | | | 30(Step 2) | | 300 (Step 3) | | | 330. |

STATE OF MONTANA

SCHEDULE OF CONSTRUCTION GRANT OBLIGATIONS

FY 19 76 FUNDS

($1,000's)

| GRANT NO. & STEP | APPLICANT NAME | FY 19 76 QUARTER | | | | FY 1977 QUARTER** | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| C 300212 | Libby | | | 75(Step 2/3 rehabilitation) | | | | 50 (Step 2) | | 125. |
| C 300213 | Hamilton | | 50 (Step 2/3 rehabilitation) | | 50(Step 2) | 800(Step 3) | | | | 900. |
| C 300214 | Red Lodge | | | | | | 17.5 (Step 2) | | 200 (Step 3) | 217.5 |
| C 300244 | Big Timber | *20(Step 1, 208 funding) | | | | | | 20(Step 2/3 rehabilitation) | | 20. |
| C 300245 | Choteau | 15 (Step 1) | | | | | | | | 15. |
| C 300215 | Townsend | | 25 (Step 2) | | 1,000 (Step 3) | | | | | 1,025. |
| C 300216 | Thompson Falls | | | | | | | | 10 (Step 2) | 10. |
| C 300217 | Boulder | | | 25 (Step 2) | | 162.5(Step 3) | | | | 187.5 |
| C 300246 | White Sulphur Springs | 11.3 (Step 1) | | | | | | | | 11.3 |
| C 300218 | Eureka | | | 20 (Step 2) | | 212.5(Step 3) | | | | 232.5 |
| C 300220 | Whitehall | | | | 20(Step 2/3 rehabilitation) | | 20 (Step 2) | | 130 (Step 3) | 170. |
| C 300222 | Stevensville | 4TH QUARTER FY'75 20(Step 2/3 re) | 25 (Step 2) | 150 (Step 3) | | | | | | 195. |
| C 300223 | Manhattan | | | | 50(Step 2/3 rehabilitation) | | 20 (Step 2) | | 100 (Step 3) | 150. |
| C 300224 | Lodge Grass | *15(Step 1, 208 funding) | | | | | | | | 0 |
| C 300225 | Sheridan | | | | | 50(Step 2/3 rehabilitation) | | | 25 (Step 2) | 75. |
| C 300226 | Sunburst | | | | 10 (Step 1) | | | | | 10. |
| C 300227 | Absarokee | | | | 50(Step 2/3 rehabilitation) | | | | 20 (Step 2) | 50. |

STATE OF MONTANA

SCHEDULE OF CONSTRUCTION GRANT OBLIGATIONS

FY 1976 FUNDS

($1,000's)

| GRANT NO. & STEP | APPLICANT NAME | FY 1976 QUARTER 1 | 2 | 3 | 4 | FY 1977 QUARTER ** 1 | 2 | 3 | 4 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| C 300228 | Darby | | | | 20(Step 2/3 rehabilitation) | | | | | 20. |
| C 300229 | Ennis | | 10 (Step 2) | | 100 (Step 3) | | | | | 110. |
| C 300247 | Drummond | 10 (Step 1) | | | | | | | | 10. |
| C 300230 | East Glacier | | | 10 (Step 2) | | 150 (Step 3) | | | | 160. |
| C 300231 | Roberts | | | | | | | 10 (Step 2) | | 10. |
| C 300232 | Hobson | | | | | 10 (Step 1) | | | | 10. |
| C 300233 | Bearcreek | *10 (Step 1, 208 funding) | | | | | | | | 0 |
| C 300234 | Lewistown | | | | | 35(Step 2/3 rehabilitation) | | | 25 (Step 2) | 60. |
| C 300234 | Laurel | | | | | 35(Step 2/3 rehabilitation) | | | 25 (Step 2) | 60. |
| C 300236 | Hardin | | | | | | | 30 (Step 2) | | 30. |
| C 300237 | Harlowton | | | | | | | 15 (Step 2) | | 15. |
| C 300248 | Browning | | | | 10 (Step 1) | | | | | 10. |
| C 300249 | Chester | | | | 10 (Step 1) | | | | | 10. |
| C 300250 | St. Ignatius | | | | 10 (Step 1) | | | | | 10. |
| C 300251 | Hot Springs | | | | 10 (Step 1) | | | | | 10. |
| C 300252 | Valier | | | | 10 (Step 1) | | | | | 10. |
| C 300253 | Brady | | | | 10 (Step 1) | | | | | 10. |

STATE OF MONTANA

SCHEDULE OF CONSTRUCTION GRANT OBLIGATIONS

FY 1976 FUNDS

($1,000's)

| GRANT NO. & STEP | APPLICANT NAME | FY 1976 QUARTER 1 | 2 | 3 | 4 | FY 1977 QUARTER** 1 | 2 | 3 | 4 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| C 300254 | Judith Gap | | | | 10 (Step 1) | | | | | 10. |
| C 300255 | Rocker | | | | 10 (Step 1) | | | | | 10. |
| C 300256 | Sidney | | | | 15 (Step 1) | | | | | 15. |
| C 300257 | Wolf Point | | | | 10 (Step 1) | | | | | 10. |
| C 300258 | Baker | | | | *15(Step 1, 208 funding) | | | | | 0. |
| C 300259 | Forsyth | | | | *20(Step 1, 208 funding) | | | | | 0. |
| C 300260 | East Helena | | | | 15 (Step 1) | | | | | 15. |
| | TOTAL 3,880 (4TH QUARTER FY75) | 188.8 | 621.0 | 170.0 | 6,285.0 | 6,780.0 | 395.0 | 202.5 | 855.0 | 19,377.3 |

*Costs associated with Step 1 for these projects have not been considered because of 208 grant funding.

**Grant needs shown in this fiscal year may come from FY77 and later allocations.

State Montana

State Code 3 0 (numeric)

(List in Priority Rank Order)

TABLE 5. LISTING OF NEW PROJECTS EXPECTED TO BE FUNDED DURING FISCAL YEAR 1976

| APPLICANT NAME | SEGMENT CODE(1) | GRANT IDENTIF. NUMBER: FACILITY NEED | SEQUENCE | TYPE OF PROJECT: (STEP) (2) | FACILITY NEED DESCRIPTION/SCOPE (Extended descriptions may be continued on additional pages) | EST. START DATE | EST. COMP. DATE | ESTIMATED TOTAL COST OF PROJECT | ESTIMATED EPA ASSISTANCE REQUIRED TO COMPLETE PROJECT | SIX MONTH PERIOD (JULY-DEC. OR JAN. - JUNE) WHEN GRANT WILL BE REQUIRED |
|---|---|---|---|---|---|---|---|---|---|---|
| Havre East | 0702 | 0261010 | 1 | 1 | Collection & int. sewers | 7-75 | 6-76 | 10,000 | 7,500 | July-Dec.75 |
| Havre East | 0702 | 0261010 | 1 | (2)(3) | Collection & int. sewers | 6-76 | 12-76 | 400,000 | 300,000 | Jan-July 76 |
| Columbia Falls | 0502 | 0241010 | 1 | 1 | Evaluate & upgrade treatment | 8-75 | 6-76 | 15,000 | Sec. 208 grant funding | |
| Polson | 0502 | 0242010 | 1 | 1 | Evaluate & upgrade treatment | 8-75 | 6-76 | 15,000 | Sec. 208 grant funding | |
| Anaconda-Opportunity | 0403 | 0243010 | 1 | (1)(2) | Evaluate & upgrade treatment | 4-75 | 6-76 | 50,000 | 37,500 | July-Dec.75 |
| Big Timber | 0201 | 0244010 | 1 | 1 | Evaluate & upgrade treatment | 7-75 | 6-76 | 20,000 | Sec. 208 grant funding | |
| Choteau | 0602 | 0245010 | 1 | 1 | Evaluate & upgrade treatment | 7-75 | 6-76 | 20,000 | 15,000 | July-Dec.75 |
| White Sulphur Sprngs | 0301 | 0246010 | 1 | 1 | Evaluate & upgrade treatment | 4-75 | 6-76 | 15,000 | 11,300 | July-Dec.75 |
| Drummond | 0403 | 0247010 | 1 | 1 | Evaluate & upgrade treatment | 7-75 | 6-76 | 13,300 | 10,000 | July-Dec.75 |
| Browning | 0601 | 0248010 | 1 | 1 | Evaluate & upgrade treatment | 1-76 | 1-77 | 13,300 | 10,000 | Jan-July 76 |
| Chester | 0601 | 0249010 | 1 | 1 | Evaluate & upgrade treatment | 1-76 | 1-77 | 13,300 | 10,000 | Jan-July 76 |
| St. Ignatius | 0501 | 0250010 | 1 | 1 | Evaluate & upgrade treatment | 8-75 | 6-76 | 10,000 | Sec. 208 grant funding | |

1) Segment Code should be consistent with Segment List.
2) Each step or combination of steps constitutes a separate project.

State Montana

State Code 3 0 (numeric)

(List in Priority Rank Order)

| APPLICANT NAME | SEGMENT CODE(1) | GRANT IDENTIF. NUMBER FACILITY NEED | SEQUENCE | TYPE OF PROJECT (STEP) (2) | FACILITY NEED DESCRIPTION/SCOPE (Extended descriptions may be continued on additional pages) | EST. START DATE | EST. COMP. DATE | ESTIMATED TOTAL COST OF PROJECT | ESTIMATED EPA ASSISTANCE REQUIRED TO COMPLETE PROJECT | SIX MONTH PERIOD (JULY-DEC. OR JAN. - JUNE) WHEN GRANT WILL BE REQUIRED |
|---|---|---|---|---|---|---|---|---|---|---|
| Hot Springs | 0501 | 02510 | 1 | 1 | Evaluate & upgrade treatment | 8-75 | 6-76 | 10,000 | Sec. 208 grant funding | |
| Valier | 0601 | 02520 | 1 | 1 | Evaluate & upgrade treatment | 1-76 | 1-77 | 13,300 | 10,000 | Jan-July 7 |
| Brady | 0601 | 02530 | 1 | 1 | Evaluate & upgrade treatment | 1-76 | 1-77 | 13,300 | 10,000 | Jan-July 7 |
| Judith Gap | 1501 | 02540 | 1 | 1 | Evaluate & upgrade treatment | 1-76 | 1-77 | 13,300 | 10,000 | Jan-July 7 |
| Rocker | 0403 | 02550 | 1 | 1 | Evaluate & upgrade treatment | 1-76 | 1-77 | 13,300 | 10,000 | Jan-July 7 |
| Sidney | 1101 | 02560 | 1 | 1 | Evaluate & upgrade treatment | 1-76 | 1-77 | 13,300 | 10,000 | Jan-July 7 |
| Wolf Point | 1401 | 02570 | 1 | 1 | Evaluate & upgrade treatment | 1-76 | 1-77 | 13,300 | 10,000 | Jan-July 7 |
| Baker | 1101 | 02580 | 1 | 1 | Evaluate & upgrade treatment | 8-75 | 6-76 | 15,000 | Sec. 208 grant fundin | |
| Forsyth | 0801 | 02590 | 1 | 1 | Evaluate & upgrade treatment | 8-75 | 6-76 | 20,000 | Sec. 208 grant fundin | |
| East Helena | 0304 | 02600 | 1 | 1 | Evaluate & upgrade treatment | 1-76 | 1-77 | 20,000 | 15,000 | Jan-July 7 |
| | | | | | | | | | | |
| | | | | | | | | | | |

1) Segment Code should be consistent with Segment List.
2) Each step or combination of steps constitutes a separate project.

The extent to which these goals can be met depends largely on actual project costs as well as the bureau's budget and available manpower. At the present time, bureau resources are not sufficient to meet them to the most desirable extent. At least two additional man-years are needed to accomplish the program's intentions to the level that each project deserves. It is planned that one additional man-year will be made available to the program with more possible if the Cleveland Bill is passed by the U. S. Congress. This would provide funding for administration of the construction grant program to be taken directly from the construction grants allocated to the states.

(b) Training

The annual water and wastewater operators' school will be held at Montana State University, November 17 - 24, 1975; and based on past experience, about 80 operators will attend this session. The quarterly newsletter will also be continued.

Due to lack of additional federal training grants, the 22-week operator training program, which has been provided in about four areas of the state each year, will be discontinued, except possibly for one in the Missoula area. One operator training instructor will be continued on the staff but will perform additional duties. His principal training duties will be to plan the annual school at Bozeman and to edit the quarterly newsletter. Also, he will plan and participate in six or seven day-long training sessions around the state which will be principally devoted to:

(i) Waste discharge permit program.

(ii) Operator certification program and developing Associations of Boards of Certification program.

(iii) Construction grants.

(iv) Promotion of local operator associations.

(v) The new Safe Drinking Water Act.

He will continue to aid in the videotape programs which have already been established. Because of manpower shortage in the construction grant program, he may also need to assist in the review of operation and maintenance manuals.

Another added duty may be to assist at plants where several days of assistance are needed to improve operation.

The following summarizes anticipated operator training activities:

| | |
|---|---|
| Operators in videotape program (3 cities) | 30 |
| Operators attending annual school | 80 |
| Operators completing 22-week training course | 12 |
| Operators attending one-day seminars | 80 |
| Operators attending trailer court-motel one-day training session | 50 |
| Operators completing home study courses | 10 |

For fiscal year 1976, the following summarizes the need for new municipal operators:

| | |
|---|---|
| New construction | 15 |
| Staff increases | 5 |
| Replacement | 40 |

All operators need periodic upgrade training, preferably some training each year. Some states require attendance at some sort of training seminar or school each year or at some other interval in order to maintain their license. Montana does not. The bureau will further investigate federal programs, such as the CETA program, to determine if federal assistance can be obtained for continuing a better training program.

(c) Operator Certification

The operator certification program will continue as in the past with administration of the program provided by the bureau and guidance provided by an advisory board established by law. Examinations will be given twice during the year for all classes, while examinations for the lower two classifications will be given throughout the year. Licenses are reissued each year. The program initiated late in fiscal year 1975 to obtain certification of water and wastewater operators of trailer courts, motels, and truck stops will be continued in fiscal year 1976. Following a day-long school, a certification exam is given. One or two additional schools will be held during the year for this purpose.

The following shows the operators certified in each classification for wastewater treatment:

| | CLASSIFICATION | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Total |
| Municipal | 69 | 50 | 56 | 50 | 4 | 229 |
| Industrial | 44 | 28 | 19 | 6 | 9 | 106 |
| State and Private | 11 | 4 | 17 | 21 | 13 | 66 |
| Trailer Courts | | | 1 | 15 | 34 | 50 |

In addition, there are 66 operators which have temporary certificates to operate until the next examination is given. Operators requiring a Class 1 license are those that operate the larger and more complex treatment facilities. Operators having a Class 5 license operate small septic tank or lagoon facilities.

The state is a charter member of the Associations of Boards of Certification (ABC), which is presently formulating a uniform operator certification program. Ways to change the state's present certification program to more closely align it to the ABC program will be sought.

## WASTE DISCHARGE PERMITS

1. State Legislation

Section 69-4806, R.C.M. 1947 states in part:

*It is unlawful to:*

*(2) carry on any of the following activities without a current permit from the department:*

*(a) construct, modify, or operate a disposal system which discharges to any state waters; or*

*(b) construct or use any outlet for the discharge of sewage, industrial wastes, or other wastes to any state waters; or*

*(3) violate any limitation imposed by a current permit.*

Section 69-4809.1, R.C.M. 1947 states in part:

*(1) The department shall:*

*(a) Issue, suspend, revoke, modify, or deny permits to discharge sewage, industrial wastes, or other wastes to state waters, consistently with rules made by the board;*

*(b) Examine and approve or disapprove plans and other information needed to determine whether a permit should be issued or suggest changes in plans as a condition to the issuance of a permit;*

*(c) Clearly specify in any permit any limitations imposed as to the volume, strength, and other significant characteristics of the waste to be discharged;*

2. Review of Past Program

A waste discharge regulation was adopted for sanitary sewage and industrial waste discharges to surface waters,

and a formal permitting program was initiated during 1968 for these wastewaters. Under the program, 81 industrial and 135 sanitary sewage waste discharge permits were issued. The larger dischargers were required to submit monitoring information on their effluent. During 1972, a waste discharge permit regulation for confined animal feeding was adopted by the board. This regulation required all operations feeding cattle, swine, sheep or other livestock for marketing purposes within any confined area or enclosure which is not normally used for raising crops or as pasture, which, at any time, discharges drainage water or manure to a state water or is causing or contributing to air pollution, to have a waste discharge permit. Permits were required of all new or expanding operations, and existing operations were required to have a permit before June 24, 1974. Under the program, several meetings were held with feeder organizations to explain the permit program, and 32 permits were issued under this program.

The Federal Water Pollution Control Act Amendments of 1972, P.L. 92-500, established the National Pollutant Discharge Elimination System whereby the federal government is authorized to issue permits for the discharge of pollutants into the nation's streams. The act provides that states with adequate water pollution control programs may take over administration of the federal permit program in their state. To avoid duplication of effort by state and federal governments, the state decided to take steps to administer the NPDES program. As the first step, the state law was revised during the 1973 legislative assembly to give definite authority for requiring monitoring, additional enforcement authority, including increased fines, and permission for the state to establish effluent and pretreatment standards. In addition, the Board of Health and Environmental Sciences adopted a rule entitled the Montana Pollutant Discharge Elimination System (MPDES) on January 18, 1974. The MPDES rule became effective on March 8, 1974, and provided the additional program elements needed by the state to comply with rules and regulations promulgated by the administrator of the U. S. Environmental Protection Agency pursuant to Section 304(h) of the act. Section 304(h) relates to the state program elements necessary to administer the NPDES program.

In accordance with Section 402 of the act, Governor Thomas L. Judge of the state of Montana applied to the administrator of EPA for permission to administer the

NPDES program on March 11, 1974. Following a public hearing on April 20, 1974, the administrator approved the state's program, and the state began issuing waste discharge permits under the MPDES in Montana on June 10, 1974.

3. Strategy

The Department of Health and Environmental Sciences will have all major dischargers and all minor dischargers, except approximately 30 percent of the irrigation dischargers, under MPDES permit prior to fiscal year 1976. MPDES permits are those permits issued in Montana by the department under the NPDES permit program, which was established pursuant to Section 402 of P.L. 92-500, and all NPDES permits issued in Montana by EPA prior to approval of the state's permit program. The department will have 26 major municipal and 105 minor municipal dischargers under MPDES permit prior to fiscal year 1976. These values are not expected to increase through the fiscal year. The department will have 35 major non-municipal (including 21 industrial and 14 feedlots) and 106 minor non-municipal (including 63 industrial, 18 feedlots, 10 irrigators, and 15 water treatment plants) dischargers under MPDES permit prior to fiscal year 1976. These values are expected to increase as a result of issuing approximately 20 irrigation permits and 10 industrial permits (primarily construction projects) during the fiscal year. In addition, the department intends to process all MPDES permit applications received during fiscal year 1976.

The department intends to reissue MPDES permits to two major and ten minor municipal dischargers during fiscal year 1976 because of expiring permits. In addition, it is estimated that the MPDES permits for approximately 50 minor municipal dischargers will be reissued during fiscal year 1976 because of errors in the existing permits and/or anticipated modifications to P.L. 92-500. The department intends to reissue MPDES permits to seven major and 31 minor non-municipal (includes 27 industrial and four water treatment plants) dischargers during fiscal year 1976. In addition, it is estimated that the MPDES permits for approximately 20 minor non-municipal dischargers will be reissued during fiscal year 1976 because of errors in existing permits.

The department will undertake an active compliance inspection program during fiscal year 1976. Emphasis

will be placed on obtaining compliance with permit conditions by all major dischargers and attaining the most efficient treatment possible with existing waste treatment facilities. A compliance inspection of a waste treatment facility will either be in the form of a reconnaisance inspection, sampling inspection, operation and maintenance inspection, or technical assistance demonstration.

A reconnaisance inspection consists of a brief visit to a permittee made for at least one of the following purposes:

(a) To observe the status of construction required by a permit.

(b) Assess the adequacy of the permittee's self-monitoring program.

(c) Check records.

(d) Discuss permit requirements and give advice when appropriate on how to meet requirements.

A sampling inspection includes visits where samples are taken and analyzed in the laboratory for the purpose of determining the accuracy of a permittee's self-monitoring program and for checking compliance with effluent limitations contained in the discharge permit.

Operation and maintenance inspections will be designed to assess the adequacy of plant operation and maintenance, equipment and facility needs and may include effluent sampling. The inspection will result in completion of EPA inspection form 7500-5 for mechanical plants and the department inspection form for lagoon facilities.

Technical assistance demonstrations will be visits of two or more days conducted to demonstrate methods, techniques, and procedures for identifying and correcting deficiencies in plant operation in order to improve the overall performance and efficiency of the treatment facility.

Inspections of industrial dischargers will consist of either reconnaisance inspections or sampling inspections. For municipal dischargers, operation and maintenance inspections and technical assistance demonstrations will be conducted as well as sampling and reconnaisance inspections. Realistically, there will be very little difference between a reconnaisance inspection and an operation and maintenance inspection for a municipal facility.

The department intends to conduct a sampling inspection of all major industrial dischargers at least two times during the fiscal year. The department intends to compliance inspect all major agricultural dischargers at least once during the fiscal year. The inspections of major agricultural dischargers will be reconnaisance in nature. Major dischargers which appear to be in violation of their permits may be inspected more frequently than indicated above.

Minor industrial dischargers will be compliance inspected as manpower and funds allow. Minor dischargers which appear to be in violation of their permit will be inspected for compliance as desired to achieve compliance with permit conditions and/or secure evidence for enforcement action.

There are approximately 170 public sewer systems in Montana which will be inspected during fiscal year 1976, even though not all of the systems have discharges. The department intends to conduct a sampling inspection of the major dischargers listed below at least once during the fiscal year.

| | | |
|---|---|---|
| Billings | Glasgow | Helena |
| Bozeman | Glendive | Kalispell |
| Columbia Falls | Great Falls | Miles City |
| Conrad | Hardin | Missoula |
| Cut Bank | Havre | Silver Bow Metro |
| | | Whitefish |

Either reconnaisance inspections or operation and maintenance inspections will be conducted at all other major municipal facilities as well as most of the minor municipal facilities. In addition, sampling inspections will be conducted on a few selected minor municipal dischargers. Emphasis will be placed on inspection and sampling those discharges with wastewater treatment facilities considered to be capable of, or marginally capable of, meeting the national secondary treatment standards.

Technical assistance demonstrations will be performed at approximately five facilities. Emphasis will be placed on providing assistance during the initial phases of startup and operation of the new secondary treatment facilities now being put into operation in Montana. The department will also continue to provide assistance in establishing good, sound laboratory capabilities for waste treatment facilities.

The periodic self-monitoring information received by the department will be reviewed immediately upon receipt and prepared for eventual inclusion into a computerized data storage system. The self-monitoring information will be reviewed during the scheduling of compliance monitoring activities, and those dischargers that appear to be violating the effluent limitations of their MPDES permits will be monitored for compliance as discussed above.

It is the goal of the department to ensure that best practicable control technology and best available control technology effluent limitations are met by all non-municipal dischargers by July 1, 1977 and July 1, 1983, respectively, as required by the act and further defined by EPA regulations. It is the goal of the department to ensure that the national secondary treatment standards and that best practicable control technology are met by all municipal dischargers by July 1, 1977 and July 1, 1983, respectively as required by the act and further defined by EPA regulations. It is also the goal of the department to achieve no discharge of pollutants to state waters by July 1, 1985.

The expanded major discharger lists are found in Tables 6, 7, and 8. On the output forms, the expanded major industrial and expanded major agricultural lists are combined under the category of non-municipal.

TABLE 6. MAJOR MUNICIPAL DISCHARGERS

| Basin Name | Discharger | Permit No. | In Compliance with 1977 Water Quality Standards* |
|---|---|---|---|
| Upper Missouri | City of Bozeman | MT-0022608 | Yes |
| Upper Missouri | City of Dillon | MT-0021458 | Yes |
| Lower Clark Fork | City of Missoula | MT-0022594 | Yes |
| Upper Clark Fork | Silver Bow Metro SID #1 | MT-0022012 | Yes |
| Upper Clark Fork | City of Hamilton | MT-0020028 | Yes |
| Upper Clark Fork | City of Deer Lodge | MT-0022616 | Yes |
| Flathead | City of Kalispell | MT-0021938 | ** |
| Flathead | Town of Columbia Falls | MT-0020036 | ** |
| Flathead | City of Polson | MT-0020559 | Yes |
| Flathead | City of Whitefish | MT-0020184 | Yes |
| Upper Yellowstone | City of Billings | MT-0022608 | Yes |
| Upper Yellowstone | City of Livingston | MT-0020435 | Yes |
| Upper Yellowstone | City of Laurel | MT-0020311 | Yes |
| Missouri-Sun-Smith | City of Great Falls | MT-0021920 | Yes |
| Missouri-Sun-Smith | City of Helena | MT-0022641 | ** |
| Milk | City of Havre | MT-0022535 | ** |
| Milk | City of Glasgow | MT-0021211 | Yes |
| Lower Yellowstone | City of Miles City | MT-0020001 | Yes |
| Lower Yellowstone | City of Baker | MT-0022381 | Yes |
| Lower Yellowstone | City of Glendive | MT-0021628 | Yes |
| Kootenai | City of Libby | MT-0020494 | Yes |
| Middle Yellowstone | City of Hardin | MT-0020834 | Yes |

*Effective July 1, 1977.
**In compliance effective July 1, 1975.

| Basin Name | Discharger | Permit No. | In Compliance with 1977 Water Quality Standards* |
|---|---|---|---|
| Marias | City of Conrad | MT-0020079 | ** |
| Marias | City of Cut Bank | MT-0020141 | Yes |
| Middle Missouri | City of Lewistown | MT-0020044 | Yes |
| Missouri-Fort Peck | City of Wolf Point | MT-0020532 | Yes |



*Effective July 1, 1977.
**In compliance effective July 1, 1975.

TABLE 7. MAJOR INDUSTRIAL DISCHARGERS

| Basin Name | Discharger | Permit No. | In Compliance with 1977 Water Quality Standards* |
|---|---|---|---|
| Missouri-Sun-Smith | The Anaconda Company | MT-0000493 | Yes |
| Missouri-Sun-Smith | Phillips Petroleum Co. | MT-0000434 | ** |
| Missouri-Sun-Smith | American Smelting and Refining Company | MT-0000345 | Yes |
| Missouri-Sun-Smith | Kaiser Cement | MT-0000451 | ** |
| Missouri-Sun-Smith | Chemetron | MT-0000426 | ** |
| Upper Clark Fork | The Anaconda Company | MT-0000183 | Yes |
| Upper Clark Fork | The Anaconda Company | MT-0000191 | Yes |
| Lower Clark Fork | Hoerner Waldorf Corp. | MT-0000035 | Yes |
| Lower Clark Fork | J. R. Daily | MT-0000094 | Yes |
| Lower Clark Fork | M & S Corporation | MT-0023531 | Yes |
| Upper Yellowstone | Great Western Sugar | MT-0000281 | ** |
| Upper Yellowstone | Burlington Northern, Inc. | MT-0000388 | Yes |
| Upper Yellowstone | Farmers Union Central Exchange | MT-0000264 | ** |
| Upper Yellowstone | Continental Oil Co. | MT-0000256 | ** |
| Upper Yellowstone | Exxon | MT-0000477 | ** |
| Upper Yellowstone | Montana Power Co. | MT-0000396 | ** |
| Upper Yellowstone | Montana Sulphur & Chemical | MT-0000230 | ** |
| Upper Yellowstone | Peabody Coal Co. | MT-0000884 | ** |
| Lower Yellowstone | Holly Sugar Co. | MT-0000248 | Yes |
| Lower Yellowstone | Montana-Dakota Utilities | MT-0000302 | ** |
| Kootenai | St. Regis Paper Co. | MT-0000221 | Yes |

*Effective July 1, 1977.
**In compliance effective July 1, 1975.

TABLE 8. MAJOR AGRICULTURAL AND OTHER DISCHARGERS NOT LISTED ELSEWHERE

| Basin Name | Discharger | Permit No. | In Compliance With 1977 Water Quality Standards* |
|---|---|---|---|
| Middle Yellowstone | Treasure State Cattle Co. | MT-0023329 | ** |
| Middle Yellowstone | Floyd Warren, Inc. | MT-0022543 | ** |
| Upper Yellowstone | Carbon County Cattle Co. | MT-0022187 | ** |
| Upper Yellowstone | F. L. Spencer Feedlot | MT-0022624 | ** |
| Missouri-Sun-Smith | Eidel Ranch, Inc. | MT-0022560 | ** |
| Missouri-Sun-Smith | HSD, Inc. | MT-0022179 | ** |
| Missouri-Sun-Smith | McIver Ranch O. | MT-0022284 | Yes |
| Missouri-Sun-Smith | Steinbach Cattle Co. | MT-0022217 | ** |
| Missouri-Sun-Smith | Sun River Cattle Co. | MT-0022527 | ** |
| Lower Yellowstone | C. E. Cattle Co. | MT-0022772 | Yes |
| Lower Yellowstone | Tenderloin Industry | MT-0028126 | ** |
| Lower Yellowstone | Valley Vu Feedlot | MT-0022268 | ** |
| Upper Yellowstone | Patton-Davidson Cattle Co. | MT-0023299 | ** |
| Upper Yellowstone | Vale Creek Ranch Feedlot | MT-0022292 | ** |

*Effective July 1, 1977.
**In compliance effective July 1, 1975.

PLANNING

1. State Legislation

Section 69-4809.1 states in part:

*(1) The department shall:*

*(d) Collect and furnish information relating to the prevention and control of water pollution;*

*(e) Conduct or encourage necessary research and demonstrations concerning water pollution.*

2. Review of Past Program

(a) Basin Planning

Under Federal Regulation 18CFR601.32 and .33 dated July 2, 1969, states were required to provide water quality management plans for river basins, metropolitan, and regional areas. In 1971, planning was initiated in areas where construction grants were contemplated. Without an interim basin, regional, metropolitan, or project plan, Environmental Protection Agency construction grants could not be obtained. The Water Pollution Control Act Amendments of 1972 set forth additional planning requires; and for grants made after July 1, 1975, a river basin plan, as outlined by Section 303(e) of the act, must be completed. The basin plan outlines the needs and priorities of the particular river basin as it pertains to water pollution control.

In fiscal year 1973, the Water Quality Bureau developed a continuing planning process which outlines the methodology and strategy to be used in preparing basin plans in Montana. The planning process is part of an overall state master plan for water quality and is coordinated with other agency water, land, and natural resources plans. The Water Quality Bureau began basin-wide detailed water quality investigations in fiscal year 1973. The state was divided into 16 water quality management basins

based on similarities in hydrology and water quality (Figure 1). The first detailed water quality management plan (Little Missouri drainage basin) was completed in fiscal year 1974.

In fiscal year 1975, seven detailed management plans were completed and approved by EPA. The status of all management plans is listed in Table 9.

TABLE 9. SCHEDULE FOR COMPLETION OF MONTANA WATER QUALITY MANAGEMENT PLANS

| Basin | Draft | Public Hearing | Governor's Certification | EPA Approvel |
|---|---|---|---|---|
| Missouri-Sun-Smith | Dec. 1974 | Sept. 1974 | | Jan. 1975 |
| Upper Yellowstone | July 1975 | Aug. 1975 | Sept. 1975 | Oct. 1975 |
| Upper Clark Fork | July 1975 | Aug. 1975 | Sept. 1975 | Oct. 1975 |
| Upper Missouri | Mar. 1975 | Apr. 1975 | May 1975 | June 1975 |
| Flathead | Sept. 1975 | Oct. 1975 | Nov. 1975 | Dec. 1975 |
| Kootenai | Dec. 1974 | Apr. 1974 | | Feb. 1975 |
| Middle Yellowstone | Mar. 1975 | May 1975 | June 1975 | July 1975 |
| Lower Clark Fork | July 1975 | Aug. 1975 | Sept. 1975 | Oct. 1975 |
| Marias | Sept. 1974 | Oct. 1974 | Apr. 1975 | May 1975 |
| Milk | | | | Feb. 1975 |
| Lower Yellowstone | Mar. 1975 | May 1975 | June 1975 | July 1975 |
| St. Mary | Sept. 1975 | Oct. 1975 | Nov. 1975 | Dec. 1975 |
| Middle Missouri | Mar. 1975 | June 1975 | Aug. 1975 | Sept. 1975 |

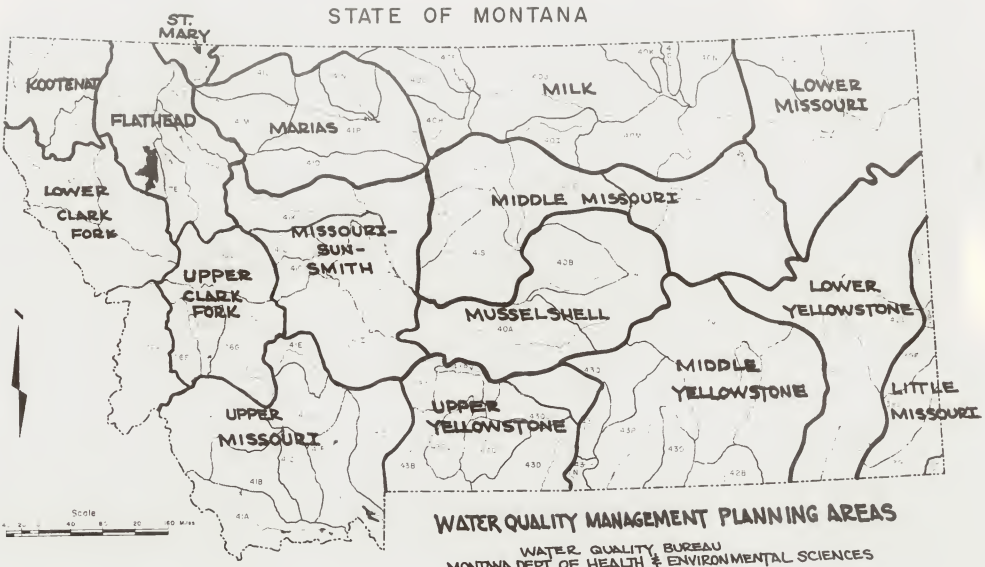
| Basin | Draft | Public Hearing | Governor's Certification | EPA Approval |
|---|---|---|---|---|
| Lower Missouri | Jan. 1975 | Feb. 1975 | Apr. 1975 | May 1975 |
| Musselshell | June 1975 | July 1975 | Aug. 1975 | Sept. 1975 |
| Little Missouri | Sept. 1973 | | | Apr. 1974 |

The basin plans have been prepared by the bureau. The principal effort has been in field examination of the basin, meeting and coordination with key basin persons and organizations, water quality sampling to document the basin's water quality, and determination of existing and potential basin water quality problems. The effort is interdisciplinary with technical impacts from sanitary engineers, biologists, hydrologists, soils scientist, and chemists. Considerable effort was directed at obtaining input from other local, state, and federal agencies and organizations. The basic plan contents and planning methodology followed 40CFR Part 131.

The completed plan will be utilized as the basis of establishing priorities for surveillance, construction grants, and permit issuance. The plan will also be used to more fully assess the water pollution control needs and the needs for additional monitoring and other work within the basin. It will review existing water quality standards and recommend changes where changes are needed. It will outline the protection needed for areas of potential development. It will further identify water quality limited and effluent limited segments.

Basin planning effort has primarily concentrated on point source pollution but includes some work to identify non-point sources of pollution. More intensive basin studies, which are planned for areas showing problems, will concentrate on non-point source problems. This will be the major emphasis of future water pollution control efforts.

Another aspect of the 303(e) planning effort is detailed investigations of stream segments that are classified as water quality limited. The investigations are limited to those segments where point discharges are present or where non-point discharges can be identified and are potentially correctable.


STATE OF MONTANA
ST. MARY
KOOTENAI
FLATHEAD
MARIAS
MILK
LOWER MISSOURI
LOWER CLARK FORK
MIDDLE MISSOURI
MISSOURI-SUN-SMITH
UPPER CLARK FORK
MUSSELSHELL
LOWER YELLOWSTONE
MIDDLE YELLOWSTONE
LITTLE MISSOURI
UPPER YELLOWSTONE
UPPER MISSOURI
Scale
WATER QUALITY MANAGEMENT PLANNING AREAS
WATER QUALITY BUREAU
MONTANA DEPT. OF HEALTH & ENVIRONMENTAL SCIENCES

In fiscal year 1975, the following water quality limited segments were investigated:

Flathead Lake (0502). A contractual investigation directed by Dr. Tibbs of the University of Montana was completed in fiscal year 1975. The trophic status and nutrient levels were determined. These data identified the impact of nutrients from the Kalispell sewage treatment plant on the lake and provided a basis for a waste load allocation.

Small Lakes in the Flathead River Drainage (0502). A contractual investigation for Dr. Sonstelie of Flathead Community College was completed, and the trophic status of 12 key lakes in the drainage was determined. Results of this investigation determine allowable nutrient loading.

Upper Clark Fork (0403). A contractual investigation by the Montana Bureau of Mines and Geology was completed. Results of this study, together with other water quality monitoring, provided the basis for a waste load allocation for the Upper Clark Fork River.

Missouri River - Three Forks to Townsend (0304). This investigation of nutrient flux and loading in the segment was completed in fiscal year 1975. Results of this investigation determine allowable nutrient loading to this segment to prevent violations of water quality standards in the river segment and in the receiving reservoir system, particularly Canyon Ferry Reservoir.

Gallatin River (0103). A contractual investigation directed by Dr. Stuart of Montana State University was completed in fiscal year 1975. This study provided a waste load allocation for the East and West Forks of the Gallatin River. The results will be utilized in design of the proposed waste treatment facility at Bozeman.

Yellowstone River - Laurel to Huntley. In the last quarter of fiscal year 1975, the bureau received a grant from the EPA to conduct a waste load allocation study of the river segment from Laurel to Huntley. This segment does not meet water quality standards due to turbidity, temperature, oil and grease, phenols, coliforms, and biochemical oxygen demand. The study was funded in the spring of 1975 and will have a one-year duration. The object of the study is to document the river condition, waste loads to the river, and allocate waste loads in this segment.

Upper Blackfoot. Mines in the Upper Blackfoot River drainage were investigated in fiscal year 1975. Acid and metal-bearing wastes are entering the river and suppressing the aquatic environment. Mines with water coming from them were sampled, and the loads of metals and acidity in the stream system were calculated.

Galena Creek and Dry Fork Belt Creek. As part of an EPA funded investigation, the bureau, in cooperation with the Department of Natural Resources and Conservation, investigated acid mine drainage in Galena Creek. This study, completed in fiscal year 1975, determined the source, load, and impact of acid mine wastes on Galena Creek and the Dry Fork of Belt Creek.

Armells Creek. An intensive water quality survey of Armells Creek was conducted as part of a study of the impact of the Colstrip coal development on water resources. Armells Creek is not a water quality limited segment, but the basin is experiencing extensive development due to the coal in the area.

Lower Clark Fork River. A water quality survey was completed in the Missoula area to assess the impact of waste discharges on the Clark Fork River.

In addition to the previously described intensive surveys, considerable water sampling was conducted as part of the field work for the 303(e) basin plans. All basins in the state, except the Little Missouri, Kootenai, and Missouri-Sun-Smith River basins, were extensively sampled in fiscal year 1975. The three basins named were sampled in fiscal year 1974.

(b) Section 208 Planning

Three areas of the state were designated by Governor Judge during fiscal year 1975 for areawide planning under Section 208 of P.L. 92-500. Through a locally controlled planning agency, the local area can assess water pollution problems and formulate and adopt a comprehensive program directed toward reducing, eliminating, or preventing water quality problems. There is a 100 percent grant for areas which are approved by EPA. The final plan which is presented must receive approval of the bureau and EPA. The following areas have been designated to date:

(i) Flathead and Lake Counties.

(ii) Yellowstone, Big Horn, Carbon, Sweet Grass and Stillwater Counties.

(iii) Treasure, Rosebud, Custer, Fallon, Cater and Powder River Counties.

(iv) Gallatin County and a small portion of Madison County.

It is expected that these four areas will receive approval by EPA.

3. Strategy

(a) General

In fiscal year 1976, several intensive water quality surveys will be conducted to upgrade and expand the basin's water quality management plan. Surveys planned are:

(i) Poplar River - The impact of Canadian coal development will be examined.

(ii) Tongue River - The impact of coal development in the basin will be examined.

(iii) Yellowstone River - Industrial and municipal waste impact on the Yellowstone River from Laurel to Huntley will be examined.

These investigations are more than water quality surveys and are more fully described in the section on water quality investigations.

In addition to intensive surveys, the feasibility and usefulness of a basin information and education program will be evaluated. The basic concept would be an intensive people-to-people program in a selected basin to relate present and future basin pollution problems to land use patterns and basin activities. Hopefully, an awareness of pollution cause-effect relationships would be a good preventive to future basin water quality problems.

(b) Proposed Intensive Surveys

In addition to planned intensive surveys for fiscal year 1976, a number of surveys will be conducted as funds and manpower are available.

Proposed intensive surveys for fiscal year 1976 are listed in Table 10. These surveys are primarily to determine the causes of water quality degradation and potential methods to abate or eliminate the pollution problem. Another reason for intensive surveys is to determine the impact of changes in waste treatment systems on water quality. These surveys include an extensive sampling in a short period of time and a detailed examination of specific factors such as land usage, stream alterations, and changes in treatment systems that impact water quality. The proposed surveys listed are in order of priority and are dependent on availability of funding.

TABLE 10. PROPOSED INTENSIVE SURVEYS IN FISCAL YEAR 1976

| Location (Basin) | Impacts and Parameters |
|---|---|
| Missouri River near Great Falls (Missouri-Sun-Smith) | Impact of industrial and domestic discharges - metals, coliforms, sediments, dissolved oxygen, and benthic. |
| Ashley Creek (Flathead) | Impact of dewatering, agricultural practices, and city of Kalispell sewage discharge - coliforms, dissolved oxygen, nutrients, coliforms, suspended solids, and temperature. |
| Upper Clark Fork River (Upper Clark Fork) | Impact of wastes from Butte and Anaconda and dewatering - metals, nutrients, benthic, and temperature. |
| Milk River near Havre and Glasgow (Milk) | Impact of sewage discharges - coliforms and dissolved oxygen. |
| Nelson and Redwater Creek (Little Missouri) | Impact of proposed fertilizer plant. |
| Lower Clark Fork River (Lower Clark Fork) | Impact of Hoerner Waldorf - color, dissolved oxygen, phenols, and benthic. |

| Location (Basin) | Impacts and Parameters |
|---|---|
| Prickly Pear Creek near Helena (Missouri-Sun-Smith) | Impact of sewage discharge - coliforms and benthic survey. |
| Little Whitefish River (Flathead) | Impact of dewatering, agricultural practices, and city of Whitefish sewage discharge - coliforms, nutrients, and benthic. |
| Little Dry Coulee and Dry Fork Marias River (Marias) | Impact of city of Conrad sewage discharge - ammonia, dissolved oxygen, coliforms, and benthic. |
| Bitterroot River (Lower Clark Fork) | Impact of urbanization - coliforms, nutrients, benthic survey. |
| Big Spring Creek near Lewistown (Middle Missouri) | Impact of sewage discharge - coliforms, benthic survey. |
| Muddy Creek (Missouri-Sun-Smith) | Review sediment abatement possibilities. |
| Arrow Creek (Middle Missouri) | Impact of natural and agricultural practices - dissolved solids and sediments. |
| Wolf Creek (Middle Missouri) | Impact of natural and agricultural practices - dissolved solids. |
| Jefferson River, Ruby River, Madison, Beaverhead (Upper Missouri) | Impact of sewage discharges - benthic survey and coliform sampling below discharges. |
| Red Rock Creek above Lima (Upper Missouri) | Impact of natural effects and agricultural practices - temperature, nutrients, suspended solids. |
| Teton River (Marias) | Impact of agricultural practices and dewatering - suspended solids, temperature, dissolved solids. |
| Marias River (Marias) | Impact of city of Conrad sewage discharge and agricultural practices - temperature and ammonia. |

| Location (Basin) | Impacts and Parameters |
|---|---|
| Beaver Creek near Wibaux (Little Missouri) | Impact of sewage discharge - coliforms and benthic survey. |
| Hilger Coulee (Marias) | Impact of natural and agricultural discharges - dissolved solids. |
| Milk River above Fresno Reservoir (Milk) | Impact of natural effects and agricultural practices - coliforms and suspended solids. |
| Lodge Creek (Milk) | Impact of natural effects and agricultural practices - coliforms and dissolved oxygen. |
| Midvale Creek at East Glacier (Marias) | Impact of sewage discharges - coliforms and benthic survey. |
| Cut Bank Creek (Marias) | Impact of city of Cut Bank discharge - ammonia and coliforms. |
| Eureka (Kootenai) | Impact of city of Eureka discharge - coliforms and nutrients. |
| Ronan (Lower Clark Fork) | Impact of city of Ronan discharge - coliforms and nutrients |
| Hot Springs (Lower Clark Fork) | Impact from town of Hot Springs discharge - coliforms and dissolved oxygen. |
| Musselshell River (Musselshell) | Temperature, salts, nutrients and sediments. |

(c) Water Quality Investigations

The bureau conducts numerous water quality investigations that involve monitoring, planning, and enforcement. Previously, such studies were placed in other categories. These projects are funded by grants from various state and federal organizations, including the EPA and by allocation of bureau funds. Special investigations that will take place in fiscal year 1976 include:

(i) Saline Seep - Continue investigation of the impact of saline seeps on surface waters, public water supplies and groundwater. The project is funded by the Old West Regional Commission.

(ii) Coal Developments - Continued investigation of the impact of energy development on water quality in the Yellowstone River. This project is funded by the Old West Regional Commission.

(iii) Yellowstone River, Billings - This investigation examines waste loading in the Yellowstone River from Laurel to Huntley. The project began at the end of fiscal year 1975. The objective is to determine stream conditions and allocate waste loads in the stream segment.

(iv) Logan Creek Watershed - This cooperative investigation was initiated in fiscal year 1975 and is funded by the U. S. Forest Service. The objective is to determine the impact of logging and road building on water quality in the Logan Creek watershed.

(v) Tongue River - This program was initiated in the latter part of fiscal year 1975 and is funded by EPA. The objective is to determine the effects of coal developments on water quality in the Tongue River and Tongue River Reservoir.

(vi) East Poplar River - This program, beginning in late fiscal year 1975, is funded by EPA. The objective is to determine the effects of a Canadian coal development on the East Poplar River.

(vii) Rattlesnake River - A cooperative program between the Missoula City-County Health Department and the bureau. The project will determine the impact of urbanization on water quality in the lower Rattlesnake Creek.

(viii) Armells Creek - Changes in water quality in the vicinity of Colstrip mining area will be examined. Increased salinity has been tentatively identified as an impact from the coal operation.

(d) Section 208 Planning

The bureau plans to work closely with the areas receiving approval under Section 208. The 303(e) plans and data collected previously by the bureau should be of particular assistance to the planning agency. It is planned to have one person work directly with each planning agency with this person's salary and expenses paid by the planning districts. His work would consist mostly of assembling and analyzing water quality data, advising the planning agency of water quality problems and possible solutions, and reviewing the planning completed as the project progresses. A continuing review process will be needed to assure that the planning proceeds towards preparing solutions for good water quality management. Without special funding, the bureau will be able to provide very little assistance to the projects. Considerable assistance was provided by both the bureau and the Montana Department of Intergovernmental Relations personnel in fiscal year 1975 in helping the districts to become established.

The state is responsible for completing 208 plans in non-designated areas. Until final regulations and guidelines are developed by EPA, it is difficult for the bureau to proceed with planning for this activity. However, when standards and guidelines are developed, the bureau will begin the planning for the 208 plans. As seen at this time, the 208 plans will principally address non-point problems.

MONITORING

1. State Legislation

Section 69-4809.1 states in part:

*(1) The department shall:*

*(d) Collect and furnish information relating to the prevention of water pollution;*

*(e) Conduct or encourage necessary research and demonstrations concerning water pollution.*

2. Review of Past Program

The water quality monitoring program initiated to compile data for the 303(e) basin water quality management plans was completed during fiscal year 1975. Approximately 450 samples were collected and analyzed for this program during fiscal year 1975.

The primary water quality monitoring network was expanded to nine stations. Quality chemical and benthos samples were established.

Over 110 municipal and industrial discharges were compliance monitored during the fiscal year. This comprised all of the major and over 50 percent of the minor MPDES discharges in Montana.

The Flathead Lake monitoring and the Flathead basin small lakes studies were completed. As part of detailed investigation, monitoring was also completed on the Missouri River and Gallatin River waste load allocation studies, the Galena Creek and Dry Fork Belt Creek acid mine drainage studies, and the Armells Creek coal development study.

A laboratory quality assurance program was instigated. New automated equipment was added to the laboratory, procedures manuals were drafted, and a sample load control program initiated.

A computerized water quality data system was established within the bureau in 1973. The principal objective of this system was to process laboratory and field data associated with water quality samples. Bureau data were entered manually into the STORET data system. The national STORET system was used by the bureau to provide information on state sewage treatment and municipal water facilities, applications and status of waste discharge permits, a monthly permit activities report, and water quality analyses in Montana.

In fiscal year 1975, a revised water quality data processing system was developed by the bureau to better handle the state's present and future water quality data requirements. This program will be used by other state agencies actively engaged in water quality work.

Several significant features of the program are the:

(a) Computerized conversion of township, range, and section data into latitude, longitude.

(b) Specific coding was established such that the data can be retrieved and put into a variety of report formats.

(c) The data are compatible with STORET codes.

The feasibility of entering all future bureau data into the STORET system by software was examined. The new bureau processing system was designed to allow data to be entered directly into the STORET system. With the assistance of EPA personnel, it is planned to begin entering data into STORET by January 1, 1976. The data system will also lend itself well to development of a state data bank that can be used by those in the state working on water quality problems.

3. Strategy

(a) General

Table 11 shows the major monitoring achievements and plans for fiscal year 1976. Many of the water quality problem areas determined by the 303(e) basin management plans will be monitored by the primary water quality network (Table 12). This network will be expanded to include 18 permanent Water Quality Bureau stations. The bureau does not have the funding capability

to perform more frequent analyses or operate a greater number of stations than indicated.

The U. S. Geological Survey also has 21 stations that will be a direct interest to the program. The parameters listed for USGS stations are not necessarily the only ones measured but are those that will be used by the Water Quality Bureau to measure water quality change.

Chemical and physical data will be measured quarterly at most stations. Conductivity will be continually monitored during the summer months on Silver Bow Creek below the Warm Springs ponds. Continuous temperature measurements will be taken on the Big Hole and Beaverhead River during the low flow warm weather.

The monitoring network will include the 55 benthic stations listed in Table 12. The Water Quality Bureau will collect and analyze at least one sample annually from each station.

A number of intensive surveys will be conducted during the fiscal year. The number will be predicated on the funds available. These surveys will concentrate on water quality problem areas and will be used to determine the effect of pollution sources on water quality and to study and recommend methods of solving the problems. The intensive surveys considered are listed in the planning section.

The major industrial dischargers list has been expanded to include 21 industries. These dischargers will be compliance monitored at least twice during fiscal year 1976. The major municipal list has been expanded to 26; each will be compliance monitored at least once during the fiscal year. Fourteen major agricultural dischargers will be visited at least once during fiscal year 1976. See the waste discharge permit section for further details.

TABLE 11. MONITORING SUMMARY

| BASIN NAME | INTENSIVE SURFACE WATER SURVEYS | | | STATIONS IN PRIMARY MONITORING NETWORK | | | | | | PERMIT COMPLIANCE INSPECTIONS | | | SEGMENTS TO BE EVALUATED FOR NPS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (1) CHEMICAL AND PHYSICAL | | | (1) BIOLOGICAL | | | | | | | | |
| | Planned FY 1975 | Achieved FY 1975 | Planned FY 1976 | Planned FY 1975 | Achieved FY 1975 | Planned FY 1976 | Planned FY 1975 | Achieved FY 1975 | Planned FY 1976 | Planned FY 1975 | Achieved FY 1975 | Planned FY 1976 | Planned FY 1975 | Achieved FY 1975 | Planned FY 1976 |
| Kootenai | 0 | 0 | 0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 4 | 0 | 3 | 0 | 0 | 0 |
| Flathead | 1 | 1 | 1 | 1/4 | 1/2 | 4/16 | 1/4 | 1/0 | 3/3 | 4 | 3 | 5 | 0 | 0 | 0 |
| Lower Clark Fork | 0 | 0 | 1 | 0/0 | 0/0 | 2/12 | 0/0 | 0/0 | 3/3 | 10 | 13 | 7 | 0 | 0 | 0 |
| Upper Clark Fork | 1 | 1 | 0 | 2/24 | 2/18 | 2/8 | 2/8 | 2/6 | 2/2 | 8 | 11 | 5 | 0 | 0 | 0 |
| Missouri-Sun-Smith | 1 | 1 | 0 | 1/4 | 1/1 | 3/12 | 1/4 | 1/1 | 7/7 | 16 | 21 | 18 | 0 | 0 | 0 |
| Upper Missouri | 0 | 0 | 0 | 2/8 | 2/2 | 3/6 | 2/8 | 2/6 | 9/9 | 5 | 3 | 0 | 0 | 0 | 0 |
| Middle Missouri | 1 | 1 | 0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 5/5 | 1 | 6 | 1 | 0 | 0 | 0 |
| Lower Missouri | 1 | 1 | 1 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 4/4 | 1 | 6 | 1 | 0 | 0 | 0 |
| Upper Yellowstone | 1 | 1 | 1 | 1/4 | 1/0 | 2/24 | 1/4 | 1/2 | 5/5 | 22 | 18 | 18 | 0 | 0 | 0 |
| Middle Yellowstone | 2 | 2 | 2 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 4/4 | 4 | 2 | 3 | 0 | 0 | 0 |
| Lower Yellowstone | 1 | 1 | 0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 1/1 | 11 | 8 | 6 | 0 | 0 | 0 |
| Marias | 1 | 1 | 0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 3/3 | 6 | 9 | 2 | 0 | 0 | 0 |
| Milk | 1 | 1 | 0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 3/3 | 12 | 10 | 1 | 0 | 0 | 0 |
| Little Missouri | 0 | 0 | 0 | 2/8 | 2/0 | 0/0 | 2/8 | 2/4 | 2/2 | 2 | 1 | 1 | 0 | 0 | 0 |
| Musselshell | 0 | 0 | 0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 3/3 | 6 | 1 | 0 | 0 | 0 | 0 |
| St. Mary | 0 | 0 | 0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 1/0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Statewide | | | 1 | | | | | | | | | | | | |
| Entire Yellowstone | | | 1 | | | | | | | | | | | | |

(1) Number of stations/total number of samples in basin

*NOTE: The number retrieved is counted through March 21, 1975*

TABLE 12. WATER QUALITY STATIONS IN PRIMARY MONITORING NETWORK

| Station | Location | Monitoring | Parameter |
|---|---|---|---|
| KOOTENAI BASIN | | | |
| Kootenai River below Libby Dam (USGS) | 31N 29W 33CAB | Monthly | Dissolved gases |
| | | Bi-weekly | Nutrients |
| Fisher River near Libby (USGS) | 30N 29W 21DBB | Daily | Sediments |
| FLATHEAD BASIN | | | |
| Flathead River at Holt Bridge (WQB) | 27N 20W 23BCA | Quarterly | Nutrients, sediments |
| North Fork Flathead River at Canadian Border (USGS) | 57N 22W | Monthly | Common ions, nutrients, sediments |
| | | Quarterly | Metals |
| Ashley Creek above Kalispell STP (WQB) | | Quarterly | Coliforms, nutrients |
| Ashley Creek below Kalispell STP (WQB) | | Quarterly | Coliforms, nutrients |
| Whitefish River near Kalispell at USGS Station (WQB) | 30N 21W 34BDC | Quarterly | Coliforms, nutrients |
| UPPER CLARK FORK BASIN | | | |
| Silver Bow Creek at lower pH shack (WQB) | 05N 09W 18CAA | Continuous during first and fourth quarters | Conductivity |
| | | Quarterly | Nutrients, metals, sediments |
| Clark Fork River at Deer Lodge (WQB) | 07N 09W 09BAB | Quarterly | Nutrients, metals, sediments |

| Station | Location | Monitoring | Parameter |
|---|---|---|---|
| LOWER CLARK FORK BASIN | | | |
| Clark Fork River at Huson Railroad Bridge (WQB) | 15N 22W 26ACB | Bi-monthly | Color, COD, TOC, phenols |
| | | Quarterly | Common ions, nutrients, sediments |
| Clark Fork River at Harper's Bridge (WQB) | 14N 21W 35ADA | Bi-monthly | Color, COD, TOC, phenols |
| | | Quarterly | Common ions, nutrients, sediments |
| UPPER MISSOURI BASIN | | | |
| East Gallatin River at Thompson Creek (WQB) | 01N 05E 18CBB | Quarterly | Nutrients, coliforms, sediments |
| Big Hole River at Twin Bridges (F&G Site - to be done in conjunction with WQB) | | Continuous during first quarter | Temperature |
| Beaverhead River near Twin Bridges (USGS Site - WQB will coordinate effort) | 05S 07W 22DBC | Continuous during first quarter | Temperature |
| MISSOURI-SUN-SMITH BASIN | | | |
| Missouri River at Toston (USGS) | 05N 02E 36BD | Monthly | Nutrients |
| Muddy Creek near Vaughn (USGS) | 22N 01E 32AB | Daily | Sediments |
| | | Monthly | Nutrients |
| Prickly Pear Creek above Helena STP (WQB) | | Quarterly | Coliforms, nutrients |
| Prickly Pear Creek below Helena STP (WQB) | | Quarterly | Coliforms, nutrients |

| Station | Location | Monitoring | Parameter |
|---|---|---|---|
| Prickly Pear Creek below ARSARCO (WQB) | | Quarterly | Metals |
| Sun River near Vaughn (USGS) | 21N 02E 33CDB | Monthly | Common ions, sediments, nutrients |
| MIDDLE MISSOURI BASIN | | | |
| Missouri River near Landusky (USGS) | 22A 24E 31AB | Weekly | Sediments |
| LOWER MISSOURI BASIN | | | |
| Missouri River near Culbertson (USGS) | 27N 56E 03BD | Monthly | Phytoplankton, common ions nutrients |
| | | Quarterly | Periphyton, chlorophyll |
| | | Weekly | Sediments |
| Red Water River at Circle (USGS) | 19N 48E 11CC | Monthly | Common ions, nutrients, sediments |
| | | Quarterly | Metals |
| East Fork of Poplar River at Canadian Border (USGS) | | Monthly | Common ions, nutrients, sediments |
| | | Quarterly | Metals |
| UPPER YELLOWSTONE BASIN | | | |
| Yellowstone River at Laure (USGS) | 02S 24E 15CCC | Monthly | Common ions, coliforms |
| | | Semi-monthly | Nutrients |
| Yellowstone River at Billings (USGS) | 01N 26E 34AA | Monthly | Common ions, nutrients |
| Yellowstone River at USGS Station in Billings (WQB) | 01N 26E 34AA | Monthly | Coliforms, phenols |
| Yellowstone River at Billings at diversion dam (WQB) | 02N 27E 34 | Monthly | Coliforms, phenols |

| Station | Location | Monitoring | Parameter |
|---|---|---|---|
| Yellowstone River at Huntley (USGS) | 02N 27E 24C | Monthly | Sediments, coliforms |
| | | Semi-monthly | nutrients |
| Yellowstone River near Livingston (USGS) | 03S 09E 12BBA | Monthly | Nutrients |
| MIDDLE YELLOWSTONE BASIN | | | |
| Big Horn River at Bighorn (USGS) | 05N 34E 43AA | Monthly | Common ions, coliforms, nutrients, sediments |
| | | Quarterly | Metals |
| Tongue River at Miles City (USGS) | 07N 47E 23D | Monthly | Common ions, nutrients, coliforms, sediments |
| | | Quarterly | Metals |
| Tongue River at Ashland (USGS) | 01N 44E 34ABD | Monthly | Common ions, nutrients, sediments |
| | | Quarterly | Metals |
| LOWER YELLOWSTONE BASIN | | | |
| Powder River at Moorhead (USGS) | 09S 48E 08B | Monthly | Common ions, sediments, nutrients |
| | | Quarterly | Metals |
| Powder River at Locate (USGS) | 08S 51E 14CB | Monthly | Common ions, nutrients, sediments |
| | | Quarterly | Metals |
| Yellowstone River near Sidney (USGS) | 22N 59E 09CAC | Monthly | Common ions, sediments, coliforms, BOD |
| | | Semi-monthly | Nutrients |

| Station | Location | Monitoring | Parameter |
|---|---|---|---|
| MUSSELSHELL BASIN | | | |
| Musselshell River at Mosby (USGS) | 14N 30E 11BB | Monthly | Common ions, nutrients, sediment, coliforms |
| | | Quarterly | Metals |
| Musselshell River at Roundup (USGS Site - WQB will collect chemical data) | 06N 23E | Quarterly | Flow, Common ions, nutrients |
| Musselshell River at Harlowton (USGS Site - WQB will collect chemical data) | 09N 28E | Quarterly | Flow, nutrients, common ions |

TABLE 13. BIOLOGICAL STATIONS IN PRIMARY MONITORING NETWORK

FLATHEAD BASIN

North Fork of Flathead River at Canadian Border
Whitefish River near Kalispell
Stillwater River near Kalispell

UPPER CLARK FORK BASIN

Silver Bow Creek at Lower pH Shack
Clark Fork River at Deer Lodge

LOWER CLARK FORK BASIN

Bitterroot River at Maclay Bridge
Clark Fork River at Huson Railroad Bridge
Clark Fork River at Harper's Bridge

UPPER MISSOURI BASIN

East Gallatin River at Thompson Creek
Big Hole River at Twin Bridges, Montana
Beaverhead River at Twin Bridges, Montana
Ruby River near Twin Bridges, Montana
Boulder River near Boulder, Montana
Red Rock River above Lima Reservoir
Sheep Creek above confluence with Muddy Creek
Muddy Creek at mouth
Grasshopper Creek near mouth
West Fork Madison River near mouth

MISSOURI-SUN-SMITH BASIN

Muddy Creek near Vaughn, Montana
Prickly Pear Creek above Lake Helena
Prickly Pear Creek below East Helena
Prickly Pear Creek below ASARCO
Sun River above Vaughn, Montana
Sun River below Vaughn, Montana

MIDDLE MISSOURI BASIN

Wolf Creek at Denton, Montana
Judith River near Utica
Judith River at mouth
Big Spring Creek north of Lewistown
Arrow Creek a mouth

LOWER MISSOURI BASIN

Red Water River at Circle
Red Water River at mouth
East Fork Poplar River at Canadian Border
East Fork Poplar River at mouth

UPPER YELLOWSTONE BASIN

Clarks Fork of Yellowstone River at Laurel, Montana
Yellowstone River at diversion dam
Yellowstone River at USGS station in Billings
Shields River near mouth
Yellowstone River at Livingston, Montana

MIDDLE YELLOWSTONE BASIN

Tongue River at Miles City, Montana
Tongue River at Ashland, Montana
Rosebud Creek above Pony Creek near Colstrip, Montana
Armells Creek near Colstrip, Montana

LOWER YELLOWSTONE BASIN

Powder River near Locate, Montana

MUSSELSHELL BASIN

Musselshell River at Mosby, Montana
Musselshell River at Bundy, Montana
Musselshell River at Delphia, Montana

MARIAS BASIN

Pondera Creek near mouth
Marias River at Loma

MILK RIVER BASIN

Teton River near Loma
Big Sandy Creek near mouth
Lodge Creek near Chinook, Montana
Milk River at Nashua, Montana

LITTLE MISSOURI BASIN

Little Missouri at Capitol, Montana
Beaver Creek at Wibaux, Montana

ST. MARY'S BASIN

Swift Current Creek near Babb, Montana

(b) Laboratory Quality Assurance Program

The laboratory quality assurance program outlined in the fiscal year 1975 plan will be expanded during fiscal year 1976.

Equipment Purchases. New automated equipment has recently been added to the Helena laboratory which will increase the load capacity as well as ensure better precision and accuracy. A new Technicon autoanalyzer II will be used for ammonia and phosphate determinations. The autoanalyzer I will be used for nitrate and sulfate determinations. A new Varian AA 6 has been added to the laboratory as well. The Varian atomic adsorption instrument includes a continuous background corrector that will enable analyses of many metals without plotting standard curves, thus increasing sample load capacity without sacrificing accuracy.

Sample Load Control. A new sample load control program was initiated during fiscal year 1975. The objective of the program was to smooth the flow of samples into the laboratory, thus avoiding huge slugs of samples coming into the laboratory that would jeopardize the chances of completing each analysis within the recommended preservation time limit. This was accomplished by scheduling sample trips well in advance. The project leaders now fill out a monthly load projections form which indicates the week of the coming month when the sampling will be done. The quality assurance coordinator then reviews the projected monthly loads and recommends changes in trip scheduling if necessary. The quality assurance coordinator also may recommend adjustments in the same number to be collected if it appears that the total laboratory load will exceed the optimum monthly quota of approximately 200 samples.

The sample load control program will be continued during fiscal year 1976. The program will be expanded to encompass turn-around time control; the objective being to ensure that computer printouts of the laboratory results are received by the investigator and project leader within a prescribed time after the sample has entered the laboratory. We plan to begin with a 30-working day turn-around time and adjust this number after periodic review of the program's success.

(c) Laboratory Procedures Manual

The purpose of this manual is to insure conformity of methods used by the three state water quality laboratories. This manual will outline the analytical procedure for the approved methods selected from the Federal Register list dated October 16, 1973. The manual will include a select method for each automated and manual technique where laboratory capabilities differ. The manual will be most useful in standardizing tests; for example, using the same drying temperature for residue determinations and BOD seeding procedures for various type wastes. The manual will be published in installments; each installment will be written by a member of the Helena laboratory. The writeup will be sent to each regional laboratory for comment before the final draft is produced. The first parameters to be covered are those used for compliance monitoring.

A laboratory chain of custody procedure has been drafted, and the needed hardware, such as seals, transfer tags, and locking storage facilities, are available.

(d) Field Quality Assurance Program

A field procedures manual has been drafted that will assist the program directors in setting up a water survey program. The manual will assist the director in determining how and where to select sampling sites. It will aid in determining the frequency of samples required to analyze the spacial and temperal distribution of the parameter. The manual covers the recommended sample storage containers and preservative methods needed for each parameter. A section of the manual discusses the use of standards and duplicate samples to check the validity of collection, handling, and preservative techniques. Field analysis procedures are detailed in the manual to insure that field personnel measuring field parameters conform to the same analytical techniques. A greater effort will be made to insure that field equipment is properly cleaned and stored after each field trip. Periodic preventive maintenance will be performed on all field equipment; proper calibration will be insured before any measurements are taken.

A field chain of custody procedures manual has been drafted, and the needed handling equipment is available. Field notebooks will be utilized to document sampling events in detail to assure court evidence admissibility.

(e) Commercial Laboratory Certification Program

A laboratory certification feasibility study will be initiated. This study will investigate the need of a certification program for commercial laboratories that are involved in state compliance monitoring programs. The study plan will encompass the following ideas:

(i) Neighboring states with or without certification programs will be contacted and administrators' opinions will be solicited.

(ii) Neighboring state certification program formats will be studied.

(iii) The attitude of commercial laboratories towards the idea of certification will be sought. Based on their attitude, it can then be determined whether a mandatory or voluntary program should be contemplated.

(iv) If a mandatory program is selected, existing Montana law will be studied to determine what enabling legislation is required to establish the program.

(v) The program plan will be formulated, and the needed manpower and financial requirements to develop, institute, and enforce the program will be studied.

(f) Self-Monitoring Training Program

We intend to study the feasibility of a training program for municipal and industrial personnel involved in the MPDES self-monitoring program. Other interested parties, such as county sanitarians, will also be invited to participate. The program could encompass the following areas:

(i) Area-wide training sessions will be held where approved analytical techniques are reviewed.

(ii) Recent equipment innovations and modifications in methods can be covered.

A certification test could be worked out on a voluntary basis.

The feasibility study will investigate neighboring state programs that may be in existence. They will also investigate the attitude of municipalities and industries towards such a program. The manpower requirements, the needed equipment, and necessary funds to carry out such a program will be investigated.

(g) Computer Processing

It is proposed to continue the data processing development work in fiscal year 1976. Specific work that will be accomplished will be:

(i) Development, in cooperation with the Environmental Protection Agency, a software program to enter bureau data into the STORET system.

(ii) Development of a state storage and retrieval capability. This will be done in cooperation with the Department of Intergovernmental Relations and will involve development of a storage system for all the water quality data and a retrieval system. The feasibility of production of annual reports utilizing this computer retrieval facility will be examined.

(iii) The feasibility of using a computerized format for monthly permit activities will be examined. It is expected that such a system would be an advantage in scheduling and reviewing monthly activities associated with the MPDES system.

(iv) The capabilities of the STORET system will be utilized to obtain additional data on waste facilities inventories, municipal water supply information, permit applications and status reports, and monthly permit activities.

(v) A retrieval of all past raw water quality data for Montana will be initiated and integrated into the bureau water quality data filing system. After entering available data, each year the files can be updated, thus providing a complete state water quality data file.

(h) Lake Survey Programs

All lakes with fisheries potential have tentatively been designated as significant. Other lakes may be designated significant in the future. The eutrophic status of 13 lakes was determined. Six of these are not eutrophic. Twenty algal assays have been performed (ten on lakes and ten on tributaries). Approximately 150 samples were analyzed for nutrients.

Statewide inquiries will be made to locate additional eutrophic lakes, and a literature search will be made to determine probable causes of problems in known eutrophic lakes. In conjunction with this program, an estimated 20 samples will be analyzed for nutrients, and five algal bioassays will be completed.

The bureau is cooperating with personnel of the National Eutrophication Survey program. In this program, several lakes and their tributary streams are being monitored for a year to determine their eutrophic status. The bureau is serving as the coordinating state agency for this program and provides necessary support functions, including preliminary selection of lakes (Table 14) and training of volunteer personnel.

TABLE 14. LAKES INCLUDED IN THE NATIONAL SURVEY PROGRAM

| Name | Location |
|---|---|
| Canyon Ferry | T10N R01W |
| Nelson | T31N R31E |
| Tiber | T30N R04E |
| Yellowtail (Big Horn) | T09S R28E |
| Tongue River Reservoir | T08S R40E |
| Georgetown | T05N R14W |
| Koocanusa | T31N R28W |
| Hebgen | T11S R03E |
| Clark Canyon | T10S R10W |
| Flathead | T22N R19W |
| MacDonald | T32N R18W |
| Lower Whitefish | T31N R22W |
| Tally | T30N R23W |
| Seeley | T16N R15W |
| Swan | T25N R18W |
| Mary Ronan | T25N R22W |

A general inventory of Lakes is shown in Table 15.

TABLE 15. INVENTORY OF LAKES

| | | |
|---|---|---|
| Total number of publicly owned freshwater lakes | 2,000 | |
| Total number of significant lakes | 500 | (estimated) |
| Number of significant lakes exhibiting noticeable eutrophy | 27 | |
| Number of significant lakes exhibiting no noticeable eutrophy | 5 | |
| Number of significant lakes for which eutrophication status is not known | 468 | |
| Total area of publicly owned freshwater lakes (acres) | 900,000 | |
| Total area of significant lakes (acres) | 600,000 | (estimated) |
| Area of significant lakes exhibiting noticeable eutrophy | 14,868 | |
| Area of significant lakes exhibiting no noticeable eutrophy | 129,979 | |
| Area of significant lakes for which eutrophication status is not known | 467,608 | |

1. State Legislation

Section 69-4802 (9) states:

*(9) "State waters" means any body of water, irrigation system, or drainage water either surface or underground; however, this subsection does not apply to irrigation waters where the waters are used up within the irrigation system and the waters are not returned to any state waters.*

Section 69-4804 states:

*This chapter applies to drainage or seepage from all sources including that from artificial, privately owned ponds or lagoons if such drainage or seepage may reach other state waters in a condition which may pollute the other state waters.*

Section 69-4904 (4) and (5) state:

*The department of health and environmental sciences shall:*

*(4) Advise persons as to the best method of purifying and disposing of their drainage, sewage, or waste water with reference to the existing and future needs of other persons and to prevent pollution;*

*(5) Consult with persons engaged in or intending to engage in manufacturing or other business whose drainage, or sewage may tend to pollute waters as to the best method of preventing pollution.*

Section 69-4905 (1) states:

*A person shall not:*

*(1) Discharge polluting matter of any kind that will pollute the quality of state waters used by a person for domestic use or as a source of supply by a city, town, public institution, water or ice company.*

2. Review of Past Program

The bureau investigates potential and existing groundwater pollution problems. In fiscal year 1975, detailed groundwater investigations were made for:

(a) Oil near Farmers Union Central Exchange refinery in Laurel.

(b) Gasoline in well water in a housing development adjacent to Bozeman.

(c) Iron in well water for a proposed subdivision near Butte.

(d) Nitrate in well water in the Helena Valley, Colorado Gulch near Helena, and in Lincoln (cooperative studies with the U. S. Geological Survey).

(e) Quality of wells near a kraft paper mill near Missoula.

(f) Changes in salinity of municipal wells in areas prone to saline seep.

(g) Effect on groundwater from the Great Western Sugar Company operation at Billings.

Groundwater regulations were requested from all states and were received from most. This information will be utilized to prepare a groundwater pollution regulation. Personal contact was made with two states to provide further background information for groundwater regulations.

3. Strategy

In fiscal year 1976, groundwater investigations will include quality impacts from saline seeps, coal developments, and septic tank effluents.

It is planned to draft a groundwater regulation including a control program for underground injection. Financial assistance from EPA is being requested to aid in this endeavor.

Table 16 summarizes the estimated extent of groundwater pollution in Montana.

TABLE 16. SUMMARY OF ESTIMATED GROUNDWATER POLLUTION

| Groundwater Aquifer Needing Evaluation | Areal Extent (sq. miles) | Est.Vol.of Water (acre-feet x $10^6$) | Predominant Pollution Problem |
|---|---|---|---|
| Holocene Alluvium (Colorado Gulch near Helena) | 20* | unknown | Sewage infiltration |
| Ft. Union | 5,000* | unknown | Salinity due to coal mining |
| Pleistocene Pediment (north Montana) | 1,000* | unknown | Nitrate from shale |
| Pleistocene Glacial Till | 50,000* | unknown | Saline seep |
| Ft. Union | 3,000* | unknown | Saline seep |
| Cretaceous Sandstones | 25,000* | unknown | Saline seep |
| Helena Valley | 30* | unknown | Septic tank pollution |
| Outlying areas near Libby | 30* | unknown | Septic tank pollution |
| Holocene Alluvium | 5* | unknown | Kraft mill wastes |
| Holocene Alluvium | 2* | unknown | Seepage of chromium wastes |
| Holocene Alluvium | 2* | unknown | Seepage of petroleum wastes |
| Glacial Till | 20* | unknown | Seepage of brine from oilfield operations |

*estimated

NON-POINT SOURCE POLLUTION

1. State Legislation

Section 69-4801 states in part:

*(2) It is not necessary that wastes be treated to a purer condition than the natural condition of the receiving stream. "Natural" refers to conditions or material present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil and water conservation practices have been applied. Conditions resulting from dams at the effective date of this act are "natural."*

Section 69-4802 states in part:

*(5) "Pollution" means such contamination, or other alteration of the physical, chemical or biological properties, of any state waters, as exceeds that permitted by Montana water quality standards, including but not limited to standards relating to change in temperature, taste, color, turbidity, or odor, or such discharge of any liquid, gaseous, solid, radioactive, or other substance into any state waters as will or is likely to create a nuisance or render such wastes harmful, detrimental, or injurious to public health, recreation, safety, or welfare, or to livestock, wild animals, birds, fish or other wildlife, provided, however, that any discharge which is permitted by Montana water quality standards is not "pollution" for the purposes of this chapter.*

Section 69-4806 states in part:

*It is unlawful to:*

*(1) cause pollution as defined in section 69-4802(5), R.C.M. 1947, of any state waters or to place or cause to be placed any wastes in a location where they are likely to cause pollution of any state waters;*

Regarding subdivisions, Section 69-5001 states:

*It is the public policy of this state to extend present laws controlling water supply, sewage disposal, and solid waste disposal to include individuals wells affected by adjoining sewage disposal and individual sewage systems to protect the quality and potability of water for public water supplies and domestic uses; and to protect the quality of water for other beneficial uses, including uses relating to agriculture, industry, recreation and wildlife.*

2. Review of Past Program

(a) Oil and Hazardous Materials

An oil and hazardous materials spill contingency plan was developed during fiscal year 1973 and was printed and distributed during fiscal year 1974. Oil spill inspections and reporting have been coordinated with the EPA, Department of Fish and Game, and the Oil and Gas Conservation Division of the Montana Department of Natural Resources and Conservation. During fiscal year 1974, substantial improvements were provided in the oilfields in the Clarks Fork of the Yellowstone River drainage. This area was the source of many of the spills which occurred in former years.

(b) Acid Mine Drainage

Studies have been made in the past of acid mine drainage to Sand Coulee Creek, and an EPA funded project was completed in fiscal year 1975 by the bureau and Department of Natural Resources and Conservation on Galena Creek and the Dry Fork of Belt Creek. Contract studies were completed during fiscal year 1975 of acid mine drainage problems in the Jefferson River drainage and mine-mill wastes in the Butte-Anaconda area.

(c) Non-Point Source

The problem of sediment due to erosion has, by necessity, received little attention by the bureau in the past years. Due to the widespread nature of the problem and limited funds and manpower to deal with the issue, direct input toward a sediment control program has been minimal.

While past efforts to establish statewide sediment control have failed, the issue has not been totally ignored by Montana. Senate Joint Resolution 52, which was adopted by the 1974 Montana legislature, states in part:

> *NOW, THEREFORE, BE IT RESOLVED BY THE SENATE AND THE HOUSE OF REPRESENTATIVES OF THE STATE OF MONTANA:*
>
> *That the Department of Natural Resources and Conservation and the Resource Conservation Advisory Council in cooperation with the Montana Association of Conservation Districts, the Department of Health and Environmental Sciences, and other interested parties make a thorough study of the sediment control problem, and existing legislation, and recommend to the 1975 Legislative Session appropriate legislation, including proposed rules and standards implementing such legislation, establishing a statewide program for the control of soil erosion and sediment damage.*

In accordance with this directive, a special committee consisting of eight state and federal agencies was formed to provide a broad interdisciplinary approach to develop a situation statement on sediment. The situation statement discusses not only the complexity of soil erosion problems throughout the state of Montana, but also provides a summary of existing state and federal legislation which could, in some way, be used to deal with this issue. This overview of the sedimentation problem was then forwarded to several hundred interested parties along with a questionnaire to provide these people with an opportunity to express their feelings regarding the existing situation and any proposed control program. Several task groups were then appointed to deal with selected areas of the problem. Following meetings by these groups, the decision was made that additional assessment of the situation must be made before legislative recommendations could be made.

Water quality management plans for nearly all basins within Montana have been completed and are providing an overview of the non-point source pollution problem throughout the state.

During fiscal year 1975, several complaints were received by the bureau on logging practices. These

were investigated by the bureau, and administrative orders were issued in some cases to procure better management to protect water quality.

(d) Saline Seep

A problem area which has begun to receive extensive attention is saline seep. Senate Bill 737 passed by the 1974 legislature provides $275,000 to the Department of State Lands to determine the extent of the problem and develop control procedures. The bureau did sampling and analyses through contract with the Department of State Lands to aid in determining the effects and extent of saline seep in Montana and to establish baseline chemical data.

(e) Subdivisions

Since 1961, the state has had a subdivision law and regulation to assure that adequate water supplies and sewage disposal facilities are provided. The law and regulation are administered by the Water Quality Bureau. The law requires approval of the subdivision plats, plans, and specifications by the Department of Health and Environmental Sciences before filing with the county clerk and recorder. Action was started in fiscal year 1975 to rewrite the subdivision regulations, which in effect will require greater investigation work by the developer to determine the adequacy of water and sewage disposal.

3. Strategy

(a) Oil and Hazardous Materials

Oil spill inspections and reporting will be coordinated with the EPA, Department of Fish and Game, and the Oil and Gas Conservation Division of the Department of Natural Resources and Conservation. The bureau will also cooperate with adjacent states, EPA, and adjoining provinces of Canada to provide a regional contingency plan. Further work will be done in the oilfields to further determine pollutional effects of oilfield activities.

(b) Acid Mine Drainage

Acid mine drainage from abandoned mines will receive low priority during the year. At the present time,

it appears that the attempt to control these discharges will require huge expenditures of funds which will have questionable results.

(c) Non-Point Source

Montana is a large and complex state. Its 93+ million acres are an area of large scale, natural and geographic variations. It is comprised of mountains, foothills, plains, and prairies with all manner of transitional zones between. Its soils range from the thin, rocky soils of the high mountains to the deep fertile soils of the alluvial river bottoms. This fact, coupled with weather extremes, results in a continual building and destroying of the land resources of the state.

Nearly two-thirds of the land area in Montana is privately owned; the remainder is under federal and state ownership.

The factors which determine land use are ownership, topography, soils, climate, economics, and the desires of those with land ownership responsibilities. A breakdown of ownership and use is shown in Table 17.

TABLE 17. LAND OWNERSHIP AND USE

| | | Ownership Millions of Acres Based on 1963 Figures | | |
|---|---|---|---|---|
| Land Use | Acres | Private | Federal | State |
| Cropland | 14,988,775 (16%) | 14.7 (98%) | - | 0.2 (2%) |
| Range and Pasture | 53,878,248 (58%) | 38.2 (71%) | 11.3 (21%) | 4.3 (8%) |
| Wood Land | 21,177,604 (23%) | 6.6 (31%) | 14.2 (67%) | 0.4 (2%) |
| Primitive and Wilderness | 2,499,273 (3%) | - | 2.4 (100%) | - |
| Urban, Roads, Industrial, etc. | 817,940 (1%) | 0.03 (36%) | 0.1 (10%) | 0.4 (54%) |
| TOTAL | | 59.8 (64%) | 28.0 (30%) | 5.3 (6%) |

Estimates show that over 32 million acres of private and state lands and 11 million acres of federal land need treatment for erosion and sediment control. Needing treatment are approximately 67 percent of the dryland cropland, 89 percent of the irrigated cropland, and 58 percent of the range and pasture lands. A definite program to control non-point source pollution and to bring about the application of proper conservation practices has long been needed.

In approaching non-point sediment water pollution problems, the Water Quality Bureau will place its emphasis on preventive measures and as a program develops, the emphasis can then be shifted to the reduction or elimination of existing problems. Any program which is developed to deal with non-point sediment problems can only be successful with cooperative effort from a number of governmental agencies and organizations with expertise in this area.

Abatement of non-point sources will require expenditure of a considerable amount of state resources. Such expenditure would substantially exceed the amount of state resources which have been devoted to this area in past years; but without that commitment, little can be done towards developing an effective program. The section 303(e) water quality management plans, which have been or will be completed for all basins within the state, have at least briefly evaluated the nature and extent of non-point problems within each basin. The preliminary investigations which have been made will require more detailed evaluation, including monitoring to characterize the pollutants and their effect on the receiving waters. The problem areas indicated in the basin plans will be further discussed with local representatives of the Soil Conservation Service and the directors of the conservation districts involved for a further assessment of these problems. Many of these problems relate in some way to irrigation activities. Information obtained through the monitoring requirements of the MPDES permits issued to the larger irrigation systems will provide us with a more thorough understanding of this problem. Since the MPDES permit requirements apply only if there is a point source discharge through a man-made or man-maintained drainage system from 3,000 or more irrigated acres, one of our top priority areas will be further assessment of the smaller irrigation systems which have a cumulative detrimental effect on water quality. Over two million acres are irrigated in Montana,

while over 13 million acres are suitable for irrigation if water delivery systems were developed. Of the existing systems, only about 12 percent of the total acres are being irrigated efficiently. Consideration will be given to an areawide approach to this problem rather than dealing with the discharge as point sources.

A proposal has been submitted to EPA for a statewide non-point source demonstration project. This proposal has met with favorable response by that agency, and effort is underway to develop a detailed work proposal. It is anticipated that this proposal would allow for the development of methodology to assess the nature and extent of non-point pollution problems and evaluate one type of control program. The geographic area of study would be the entire state of Montana, exclusive of designated Section 208 planning area. The Department of Health and Environmental Sciences would be primarily responsible for the state with input from other agencies (particularly the Conservation Districts Division of the Department of Natural Resources and Conservation) on all governmental levels having expertise or legal responsibility in this area. These agencies would cooperate in the development of best management practices as well as a program of administration by a local conservation district. If successful, this approach could be applied throughout the region.

The section 303(e) water quality management plans as mentioned earlier provide an indication as to problem areas and would provide direction for more detailed studies. Since the majority of non-point pollution sources result from a combination of geologic erosion and improper conservation practices, it will be necessary to provide guidelines for sediment control. Montana water quality standards define naturally occurring as conditions or material present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil, and water conservation practices have been applied. These guidelines would then provide the regulatory agency with a means by which they could evaluate existing practices to determine if, in fact, they were the most reasonable.

The importance of inter-agency cooperation has already been mentioned and would be especially important at this stage of program development. Agencies such as the Soil Conservation Service have developed standards for certain conservation practices and could provide expertise in the development of model guidelines.

While it would be difficult to develop regulations which would be applicable over the entire state or the Rocky Mountain region, the guidelines could serve as an effective model to be modified as local conditions dictate.

As indicated in the review of state legislation, our agency currently has the legal authority to deal with pollution originating from non-point sources. It is our opinion, however, that to approach the issue with a totally state level administered program would not be successful. In cooperation with those agencies which have and would be involved in this matter, much of the administrative responsibility would be placed on a local group such as the Soil Conservation District board who is familiar with not only the existing problems, but the possible solutions to the same. Such an organization could provide the necessary link between the regulatory agencies and the general public responsible for the sediment problems.

We foresee a group such as this playing an important educational role and at the same time, serving as a clearinghouse for those parties within their districts having erosion problems. With actual enforcement of Montana water quality laws remaining with the Department of Health and Environmental Sciences, a local group could significantly reduce the workload of the regulatory agency.

Under such a program, it would seem possible to develop an extensive sediment control program which would require considerably less resource imput by regulatory agencies than would a total state administered program.

While all details of such a sediment control program cannot be completed at this time, it does, in our opinion, represent the most reasonable approach to an extremely widespread and complex program.

Table 18 shows the non-point source problems in the various basin water quality management planning areas.

TABLE 18. NON-POINT SOURCES

| Basin Needing Evaluation | Drainage Area (square miles) | Principal Type of Non-Point Source Pollution |
|---|---|---|
| Middle Missouri | | 1 - 2 - 5 |
| Milk | | 1 - 2 - 5 |
| Flathead | | 3 - 6 |
| Upper Clark Fork | | 4 - 5 |
| Lower Clark Fork | | 3 - 5 - 6 |

| Basin Needing Evaluation | Drainage Area (square miles | Principal Type of Non-Point Source Pollution |
|---|---|---|
| Upper Missouri | | 2 - 4 - 5 - 6 |
| Missouri-Sun-Smith | | 1 - 2 - 4 - 5 |
| Musselshell | | 1 - 5 - 6 |
| Lower Missouri | | 1 - 5 |
| Kootenai | | 3 |
| Marias | | 1 - 5 - 6 |
| Upper Yellowstone | | 2 - 5 |
| Middle Yellowstone | | 2 - 5 |
| Lower Yellowstone | | 2 - 5 |
| Little Missouri | | 5 |

1 - Saline Seep
2 - Irrigation Return Flow
3 - Sediment from Logging
4 - Acid Mine Drainage
5 - Sediment from Poor Conservation Practices
6 - Dewatering - Physical Loss of Habitat

(d) Saline Seep

Identifying the effects and extent of saline seep will continue in fiscal year 1976 through a contract with the Old West Commission. This will consist principally of a sampling and analysis program. Saline seep is a problem that some means of control will need to be developed, either through the existing water pollution control law or other legislation.

(e) Subdivisions

Substantial manpower effort will be required for subdivision review as it relates to prevention of water pollution. An estimated 200 subdivisions will be reviewed, and the majority of these will provide subsurface disposal as their means of sewage disposal. The subdivision load should be reduced during fiscal year 1976 with passage of House Bill 666, which in part requires the demonstration of public need and interest before a subdivision can be approved at the local level. Passage of Senate Bill 227 by the 1975 legislature allows the

Department of Health and Environmental Sciences to establish a fee schedule for subdivision review. However, the fee schedule will not completely support the subdivision program as restrictive limits have been established. However, it should help to establish a better review process which is needed to upgrade the program. Final adoption of new subdivision regulations should occur early in fiscal year 1976.

ENFORCEMENT

1. State Legislation

Section 69-4806 is the heart of Montana's water pollution control law. In summary, this section states:

*It is unlawful to:*

*(1) cause pollution as defined in section 69-4802(5), R.C.M. 1947, of any state waters or to place or cause to be placed any wastes in a location where they are likely to cause pollution of any state waters;*

*(2) carry on any of the following activities without a current permit from the department:*

*(a) construct, modify, or operate a disposal system which discharges to any state waters; or*

*(b) construct or use any outlet for the discharge of sewage, industrial wastes, or other wastes to any state waters; or*

*(3) violate any limitation imposed by a current permit.*

2. Review of Past Program

Two administrative rules have been adopted by the Board of Health and Environmental Sciences which are key elements in Montana's water pollution control program. MAC 16-2.14(10)-S14480 contains Montana's water quality standards which describe in-stream water quality requirements for specified uses and serve as the primary means for defining pollution. The Montana Pollutant Discharge Elimination System rule is contained in MAC 16-2.14(10)-S144460. This rule provides the mechanism for authorizing and controlling point source discharges to state waters.

Violators of Montana's water pollution control law or rule, permit, or order established or issued pursuant to the law could be subject to injunction, civil penalties

up to $10,000 for each day of violation or criminal penalties with fines not to exceed $25,000 per day of violation and/or imprisonment for not more than one year for an initial conviction and not more than $50,000 per day of violation and/or imprisonment for not more than two years for subsequent violations.

Significant steps were taken during fiscal year 1975 to finally establish a workable enforcement program. An additional attorney was hired for the legal unit, who was able to devote approximately half-time to the water quality program, and an enforcement coordinator was appointed within the Water Quality Bureau, who devoted approximately 0.25 man-year to coordinating enforcement activities within the bureau. The main objectives for fiscal year 1975 were:

(a) To establish definite uniform procedures and guidelines to be used by the Water Quality Bureau in carrying out administrative and judicial enforcement action, and

(b) To take necessary enforcement steps to ensure and achieve compliance with permit conditions contained in waste discharge permits issued pursuant to Montana's Pollutant Discharge Elimination System.

Several notices of violation and orders to take corrective action were issued during the first part of fiscal year 1975; however, the administrative procedures for this type of order were found to be quite cumbersome. The most effective enforcement tools were found to be administrative requests for compliance, abatement orders, and compliance orders. As enforcement programs progress, it is anticipated that injunctive relief and other court action will also be effective.

The state attorney general is the statutory attorney for the department. The department attorneys have been commissioned as special assistant attorney generals to bring all action to court on behalf of the department. State law makes the county attorney the public prosecutor, and he is responsible for attending district court and conducting, on behalf of the state, all prosecutions for public offenses and represents the state in all matters and proceedings to which it is a party. The state attorney general has no authority to institute criminal actions in any counties of the state. This is the duty of the county attorney in which the violation occurred.

3. Strategy

The enforcement program is not unlike any other new program in that it is difficult to immediately assign or reallocate staffing for an adequate program. With the experience gained during fiscal year 1975, it is estimated the following staffing level would be needed to develop and manage a respectable enforcement program:

(a) Attorney - three-fourths man-year.

(b) One full-time enforcement coordinator and one full-time technician level investigator in the Helena office.

(c) One half-time technician level investigator in both regional offices.

While this level of staffing would be desirable for fiscal year 1976, it will not be possible to attain due to other program commitments and requirements. Instead, the following staffing level is expected:

(a) Legal unit attorney - one-half man-year.

(b) Enforcement coordinator at Helena office - one-tenth man-year.

(c) Part-time assistance from field personnel located at Helena, Kalispell, and Billings for inspections and investigations - one-half man-year.

(d) Administrative work on permit enforcement - one-third man-year.

Assistance of the Montana Department of Fish and Game will be solicited and utilized whenever possible, especially in the administration of Section (6)(g) of Montana's water quality standards, which deals primarily with the effects of construction activities on water quality. The department will also solicit assistance from the legal staff of the Environmental Protection Agency.

The two main priorities for fiscal year 1976 will again be to:

(a) Continue development of procedures and guidelines to be used by the Water Quality Bureau staff in carrying out administrative and judicial enforcement actions.

(b) Take action necessary to ensure compliance with requirements of waste discharge permits issued in Montana.

A considerable effort will also be devoted to establishing rules and standards designed to protect, enhance, and maintain the state's groundwaters.

Based on fiscal year 1975 experience, it is estimated the following numbers of enforcement action will be initiated by the department:

| | | FY 1975 | FY 1976 |
|---|---|---|---|
| (a) | Abatement Orders | 28 | 50 |
| (b) | Compliance Orders . . | 7 | 10 |
| (c) | Administrative Requests for Compliance | 90 | 20 |
| (d) | Notices of Violation and Orders to Take Corrective Action | 8 | 0 |
| (e) | Court Injunction or Law Suits | 2 (state)<br>3 (federal) | 5 |

## PUBLIC PARTICIPATION

1. Review of Past Program

A water pollution control advisory council is established by law. The council provides recommendations to the Water Quality Bureau on its program.

Blasser, Zeni and Company was contracted by EPA during fiscal year 1975 to provide recommendations to the bureau on how to improve public participation. Their basic recommendation was to provide a person working full-time in this activity. This becomes particularly important as the bureau moves more towards a non-point source control program, and a good education program is needed. If funds allow, employment of a person to perform in this area will be given high priority.

A public meeting was conducted in Helena on April 10, 1975, on the proposed fiscal year 1976 program plan. Copies of the draft fiscal year 1976 plan were provided at several public libraries around the state and were provided to organizations upon request. A hearing was also held on April 10, 1975, for changes to the priority criteria and priority ratings.

2. Strategy

A public meeting or hearing will be held on the proposed fiscal year 1977 state program plan in the spring of 1976. A public hearing will be held on the construction grants needs list and priority program in March or April of 1976.

Following completion of a draft of a basin water quality management plan, a public hearing will be held on the plan at some location within the basin. Preliminary input will be solicited for the plans. Through the waste discharge permit program, public notices will be circulated on pending permit applications. Public hearings will be held where the need is indicated.

The state has an environmental impact statement requirement, which is patterned after the federal act. An

estimated 90 statements and assessments will be prepared during the plan year, and these will be distributed to selected state and federal agencies, local groups, and interested citizens. The Environmental Sciences Division has a technical writer who is responsible for coordinating and editing the impact statements. The impact statements and assessments appear to be the best means of keeping people informed on pending significant approvals by the bureau. Public hearings are held where there is considerable public interest.

Public notices will be provided for all pending permits, and public hearings will be held where there is considerable public interest.

The Section 208 areawide plans will provide considerable public participation at the local levels. Advisory committees of public agencies, special interest organizations, and citizens will be part of the planning process. Public meetings will be frequently held to review the planning and to obtain comments.

It is the bureau's plan to hire an educator to work primarily on the non-point program and public drinking water program (Public Law 93-523). These are two programs which will require considerable effort in education in order for the programs to be effective.

The bureau welcomes invitations to speak to groups and organizations to explain and discuss their water pollution control program.

## OUTPUTS, BUDGET AND MANPOWER RESOURCES

The summary of projected outputs which can be quantified at this time is shown in Table 19. Table 20 shows the budget and manpower estimated to be devoted to the different program elements during fiscal year 1976.

There will be some shifting of resources during the plan year--mainly from planning and monitoring to the construction grants program and into contractual studies. The EPA program grant will be reduced from fiscal year 1975. Increases of salaries and inflationary increases of supplies and materials will actually allow for less manpower from state and EPA program grant funds. This means that a greater shift to contractual studies is needed to support existing staff members if the bureau is to continue with their present manpower resources.

The resources shown do not permit much work in the non-point source pollution area or Section 208 statewide planning. As guidelines are set forth to control these sources, additional resources will be required in future fiscal years. The grant application for sediment control is not shown, as a final proposal has not been made. Also, considerable additional manpower in municipal facilities program management would be highly desirable.

A summary of the sources of funds for the water quality program is shown below:

| | | |
|---|---|---|
| EPA Program Grant Funds | | |
| Base Grant | $137,130 | |
| Permits and Compliance Assurance Enforcement | 54,852 | |
| Municipal Facilities Incentive | 60,337 | |
| Planning Incentive | 21,940 | |
| Yellowstone River Waste Load Allocation | 33,033 | |
| Carryover from fiscal year 1975 funds | 11,021 | |
| TOTAL EPA PROGRAM GRANT | | $318,313 |
| Special Contractual Studies | | |
| Old West Commission Saline Seep | $30,000 | |
| Old West Commission Yellowstone River | 50,815 | |

| | | |
|---|---|---|
| Special Contractual Studies (continued) | | |
| EPA Tongue River Study | $23,910 | |
| EPA Poplar River Studies | 27,974 | |
| Yellowstone River Basin Modeling Study | 6,161 | |
| Bureau of Reclamation Irrigation Analyses | 5,000 | |
| USFS Flathead River Study | 12,000 | |
| TOTAL CONTRACTUAL STUDIES | | $155,860 |
| Funding from 208 Designated Areas | | $ 80,000 |
| State Funds* | | |
| Operator Licensing | $11,000 | |
| General Fund Budget | 232,965 | |
| TOTAL STATE FUNDS | | $243,965 |
| TOTAL BUDGET | | $798,138 |

*Estimated

TABLE 19

OUTPUT COMMITMENTS
Estimated Output (Cumulative)

| Output Units | Reporting Frequency | 6/30/75 | 9/30/75 | 12/31/75 | 3/31/76 | 6/30/76 |
|---|---|---|---|---|---|---|
| CONSTRUCTION GRANTS | | | | | | |
| Construction Grant Awards | | | | | | |
| Dollar Amount of Step 1 Awards | Monthly | - | 63.8 | 6.38 | 63.8 | 193.8 |
| Dollar Amount of Step 2 Awards | Monthly | - | 25.0 | 296.0 | 391.0 | 661.0 |
| Dollar Amount of Step 3 Awards | Monthly | - | 3860.0 | 4010.0 | 4010.0 | 9795.0 |
| Dollar Amount of Step 2/3 Sewer Rehabilitation Grants | Monthly | - | 120.0 | 320.0 | 395.0 | 495.0 |
| Number of Step 1 Awards | Monthly | - | 5 | 5 | 5 | 17 |
| Number of Step 2 Awards | Monthly | - | 1 | 9 | 13 | 18 |

| Output Units | Reporting Frequency | 6/30/75 | 9/30/75 | 12/31/75 | 3/31/76 | 6/30/76 |
|---|---|---|---|---|---|---|
| CONSTRUCTION GRANTS (continued) | | | | | | |
| Number of Step 3 Awards | Monthly | - | 1 | 2 | 2 | 11 |
| Number of Step 2/3 Sewer Rehabilitation Grants | Monthly | - | 2 | 6 | 7 | 11 |
| O & M Manual Review | Quarterly | - | 0 | 3 | 9 | 9 |
| Interim Inspections | Quarterly | - | 2 | 4 | 6 | 8 |
| Facility Plan Review | Quarterly | - | 16 | 21 | 30 | 30 |
| Final Plans and Spec Review | Quarterly | - | 0 | 6 | 12 | 16 |
| Review of Change Orders | Quarterly | - | ? | ? | ? | ? |
| PERMITS, COMPLIANCE AND ENFORCEMENT | | | | | | |
| Non-Municipal | | | | | | |
| Number of Major (expanded list) Permits Issued | Monthly | 35 | 35 | 35 | 35 | 35 |
| Number of Minor Permits Issued | Monthly | 106 | 126 | 131 | 136 | 136 |

| Output Units | Reporting Frequency | 6/30/75 | 9/30/75 | 12/31/75 | 3/31/76 | 6/30/76 |
|---|---|---|---|---|---|---|
| PERMITS, COMPLIANCE AND ENFORCEMENT (continued) | | | | | | |
| Non-Municipal | | | | | | |
| Percent of Major (expanded list) Permittees in Compliance with Schedules | Quarterly | 95 | 100 | 100 | 100 | 100 |
| Percent of Major (expanded list) Permittees in Compliance with Effluent Limitation | Quarterly | 60 | 75 | 85 | 95 | 100 |
| Number of Reconnaissance Inspections of Major (expanded list) Permittees | Monthly | - | 7 | 7 | 7 | 14 |
| Number of Sampling Inspections of Major (expanded list) Permittees | Monthly | - | 12 | 22 | 32 | 42 |
| Municipal | | | | | | |
| Number of Major (expanded list) Permits Issued | Monthly | 26 | 26 | 26 | 26 | 26 |

| Output Units | Reporting Frequency | 6/30/75 | 9/30/75 | 12/31/75 | 3/31/76 | 6/30/76 |
|---|---|---|---|---|---|---|
| PERMITS, COMPLIANCE AND ENFORCEMENT (continued) | | | | | | |
| Municipal | | | | | | |
| Number of Minor Permits Issued | Monthly | 105 | 105 | 105 | 105 | 105 |
| Percent of Major (expanded list) Permittees in Compliance with Schedules | Quarterly | 42 | 50 | 60 | 80 | 100 |
| Percent of Major (expanded list) Permittees in Compliance with Effluent Limitations | Quarterly | 42 | 50 | 60 | 80 | 100 |
| Number of Reconnaisance Inspections of Major (expanded list) Permittees | Monthly | - | 2 | 3 | 4 | 5 |
| Number of Sampling Inspection of Major (expanded list) Permittees | Monthly | - | 6 | 8 | 10 | 16 |
| Number of O & M Inspections of Major Facilities | Monthly | - | 1 | 3 | 4 | 5 |

| Output Units | Reporting Frequency | 6/30/75 | 9/30/75 | 12/31/75 | 3/31/76 | 6/30/76 |
|---|---|---|---|---|---|---|
| PERMITS, COMPLIANCE AND ENFORCEMENT (continued) | | | | | | |
| Municipal | | | | | | |
| Number of Technical Assistance Demonstrations of Major Facilities | Monthly | - | 0 | 2 | 3 | 5 |
| Reissuance of NPDES Permits | | | | | | |
| Number of Major Municipal Permits Reissued | Monthly | - | 1 | 1 | 1 | 2 |
| Number of Major Non-Municipal Permits Reissued | Monthly | - | 2 | 2 | 2 | 7 |
| BASIN PLANNING | | | | | | |
| Number of Basins with Phase I Planning Substantially Completed | Monthly | 13 | 16 | 16 | 16 | 16 |
| Number of Phase I Basin Plans Approved | Monthly | 8 | 12 | 16 | 16 | 16 |

| Output Units | Reporting Frequency | 6/30/75 | 9/30/75 | 12/31/75 | 3/31/76 | 6/30/76 |
|---|---|---|---|---|---|---|
| AMBIENT MONITORING | | | | | | |
| *Chemical/Physical Monitoring Stations in the Primary Monitoring Network | - | - | 16/19 | 16/39 | 16/58 | 16/78 |
| Biological Monitoring Stations in the Primary Monitoring Network | - | - | 12 | 24 | 36 | 48 |
| TRAINING | | | | | | |
| Municipal Wastewater Treatment Plant Operators Receiving Training | Quarterly | 47 | 62 | 142 | 172 | 212 |

*Number of stations/cumulative number of samples collected.

TABLE 20. MONTANA WATER POLLUTION CONTROL PROGRAM RESOURCES

| TOTAL STATE POLLUTION CONTROL BUDGET | | | | | | | |
|---|---|---|---|---|---|---|---|
| Program Element | FY 76 S106 Grant Funds | Non-Federal State Funds | Total Budget (including all other federal funds) | WPC Man Years | WPC Program Personnel Costs | Related EPA Water Pollution Control Objectives | Additional Related State Water Pollution Control Objectives |
| (A) Municipal Facilities Program Management | $ 70,000 | $ 10,000 | $ 80,000 | 4.0 | $ 68,000 | Municipal facilities management. S201 facility plans review. | |
| (B) Permits | 80,000 | 20,000 | 100,000 | 5.6 | 83,000 | Permit issuance. Permit revisions. | |
| (C) Compliance Assurance and Municipal O & M | 53,000 | 44,000 | 97,000 | 5.4 | 81,000 | Compliance assurance (appropriate outputs and activity indicators). | |
| (D) Enforcement | 20,230 | 15,000 | 35,230 | 1.5 | 28,000 | Compliance assurance (appropriate outputs and activity indicators). | |
| (E) Planning | 20,000 | 2,000 | 102,000 | 5.1 | 87,000 | S208 planning, S303(e) planning, non-point sources management planning, water quality standards revisions. | |
| (F) Non-Point Source Management | 0 | 70,000 | 70,000 | 4.0 | 60,000 | Operational non-point source control activities. | Includes subdivision review and groundwater |
| (G) Ambient Monitoring | 10,000 | 28,000 | 38,000 | 2.1 | 29,000 | S305(b) report, quality assurance, state monitoring program development. | |
| (H) Manpower Development and Training | 10,000 | 25,000 | 35,000 | 2.1 | 17,000 | Facilities operations improvement (appropriate outputs and activity indicators). | Includes operator certification and training. |
| (I) Public Participation | 10,000 | 15,000 | 25,000 | 1.3 | 20,000 | Includes all separate public participation and information costs. | Includes environmental impact statements, talks, publications and WPC educational program. |
| (J) Administration | 16,200 (includes $16,200 indirect) | 12,000 | 33,700 (includes $21,700 indirect) | 0.6 | 12,000 | No specific objective appears in EPA guidance. | Indirect costs and bureau administration. |
| (K) Other Investigation Contracts | 28,883[1] | 2,965 | 182,208[2] | 10.0 | 150,000 | Spill control, special contractual studies. | Special contractual studies. |
| (L) Total | $318,313 | $243,965 | $798,138 | 41.7 | $650,000 | | |

(1) Includes EPA Billings area waste allocation study.
(2) Includes Old West Commission saline seep investigations,
Old West Commission Yellowstone River study,
EPA Tongue River investigations,
EPA Poplar River investigations,
U. S. Forest Service Flathead study,
Bureau of Reclamation sampling analyses.

ADDITIONAL DATA:
Funds planned to be derived from charges for the processing of municipal construction grants - $0
Funds planned to be derived from retention of percentage of the state's total Title II construction grants allocation - $0
Estimated unobligated FY 1975 S106 grant award - $11,021
Planned carryover to FY 1976 - $11,021
Funds planned for WWTP personnel training and development - Subtotals of program element (H):
Column 1 = $10,000
Column 2 = $25,000
Column 3 = $35,000
Funds planned to be received from management coordination services to areawide planning agencies under S208 regulations - $80,000 (included under planning).

# APPENDIX

APPENDIX A

April 15, 1975

MONTANA STATE DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES

PRIORITY SYSTEM FOR EPA CONSTRUCTION GRANTS

I. The following priority evaluation system is established by the State Department of Health and Environmental Sciences for the allocation of federal grants to municipalities for sewage treatment works construction. This system is based on:

1. Severity of pollution problem
2. Population affected
3. Need for preservation of pure waters
4. National priorities

The state's construction needs list and ranking of projects will be submitted to EPA by June 30 of each year. From this list, the highest priority projects for which there is money available will receive a notice of project priority. Before receiving an actual priority certification, scheduling for the project must meet department approval.

II. Projects shall be rated as follows:

1. Stream segment designation*

| | |
|---|---|
| a. (i) Water quality limited due to municipal wastewater discharge or a combination of municipal and industrial wastewater discharges. | 8 |
| (ii) Water quality limited due to a combination of municipal, industrial and non-point discharges which create or have the potential of creating a lake eutrophication problem. | |
| b. Effluent limited. | 6 |
| c. Water quality limited due to non-point discharges in combination with municipal and/or industrial discharges not covered by a. (ii) above. | 4 |
| d. Water quality limited due to non-point sources or abandoned acid mine discharges. | 2 |

2. Water-use classification of stream receiving discharge:

| | |
|---|---|
| a. $B\text{-}D_1$ or higher | 6 |
| b. $B\text{-}D_2$ or $C\text{-}D_1$ | 4 |
| c. $B\text{-}D_3$ or lower | 2 |

3. Population served by project:

| | |
|---|---|
| a. 10,000 or greater | 3 |
| b. 1,000 to 10,000 | 2 |
| c. Less than 1,000 | 1 |

4. Scope of the project in abating pollution:

   a. Abatement of a serious public health hazard or nuisance for which an abatement order has been issued by the department's executive officer. 40

   b. Improved treatment or new treatment to replace existing facilities or new treatment facilities, including interceptors, to serve existing untreated discharges. Facilities are needed to meet water quality criteria or minimum treatment requirements (includes reduction of infiltration water). 30

   c. Elimination of individual disposal systems that presently create localized public health problems or public health hazards. 15

   d. Separation of storm and sanitary sewers to prevent bypassing. 10

5. Phase construction:

   a. Grant previously awarded on prior phase of project and new grant needed for next phase to keep project on schedule. 30

III. Where more than one project has the same number of priority points, further rating of the projects will be based on population equivalent served by the project.

IV. Projects which are certified by the state for federal grant participation but do not receive a grant agreement prior to the end of the fiscal year will receive an additional 50 points. Such points will be applied to their total point value for the following fiscal year.

*V. Projects which have fulfilled the requirements of a "Step 1" grant and have an approved facility plan will receive an additional 10 points at the time of a scheduled priority review. Priority reviews will be held at least annually with more frequent reviews contingent upon the availability of unobligated funds.*

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*Water quality limited means that to protect the streams with this designation, treatment greater than the general minimum treatment levels established for wastewater are needed to meet stream water quality criteria.

Effluent limited means that the general minimum treatment levels established for wastewaters are ample to meet stream water quality criteria.

The general minimum treatment level for domestic sewage is secondary treatment. For new sources of wastewater, the state's anti-degradation statement is applicable.

APPENDIX B

PROPOSED
FY76 PRIORITY LIST

| COMMUNITY | STREAM SEGMENT | WATER USE | POPULATION SERVED | SCOPE OF PROJECT | PHASE CONSTR. | TOTAL POINTS |
|---|---|---|---|---|---|---|
| Three Forks | 6 | 6 | 2 | 30 | 30 | 74 |
| Great Falls | 4 | 4 | 3 | 30 | 30 | 71 |
| Butte | 8 | 2 | 3 | 40 | | 53 |
| Corvallis | 6 | 6 | 1 | 40 | | 53 |
| Victor | 6 | 6 | 1 | 40 | | 53 |
| Miles City | 6 | 2 | 2 | 40 | | 50 |
| Poplar | 6 | 2 | 2 | 40 | | 50 |
| Blgs. 6th Ave. N. Int. | 4 | 2 | 3 | 40 | | 49 |
| Whitefish | 8 | 6 | 2 | 30 | | 46 |
| Columbia Falls | 8 | 6 | 2 | 30 | | 46 |
| Polson | 8 | 6 | 2 | 30 | | 46 |
| Gallatin County RID 305 | 8 | 6 | 2 | 30 | | 46 |
| Bozeman | 8 | 4 | 3 | 30 | | 45 |
| Anaconda-Opportunity | 6 | 6 | 3 | 30 | | 45 |
| Bigfork | 8 | 6 | 1 | 30 | | 45 |
| Livingston | 6 | 6 | 2 | 30 | | 44 |
| Dillon | 6 | 6 | 2 | 30 | | 44 |
| Libby | 6 | 6 | 2 | 30 | | 44 |
| Hamilton | 6 | 6 | 2 | 30 | | 44 |
| Red Lodge | 6 | 6 | 2 | 30 | | 44 |
| Big Timber | 6 | 6 | 2 | 30 | | 44 |
| Choteau | 6 | 6 | 2 | 30 | | 44 |
| Townsend | 6 | 6 | 2 | 30 | | 44 |
| Thompson Falls | 6 | 6 | 2 | 30 | | 44 |
| Boulder | 6 | 6 | 2 | 30 | | 44 |
| White Sulphur Springs | 6 | 6 | 2 | 30 | | 44 |
| Eureka | 6 | 6 | 2 | 30 | | 44 |
| Whitehall | 6 | 6 | 2 | 30 | | 44 |
| Stevensville | 6 | 6 | 1 | 30 | | 43 |
| Manhattan | 6 | 6 | 1 | 30 | | 43 |
| Lodge Grass | 6 | 6 | 1 | 30 | | 43 |
| Sheridan | 6 | 6 | 1 | 30 | | 43 |
| Sunburst | 6 | 6 | 1 | 30 | | 43 |
| Absarokee | 6 | 6 | 1 | 30 | | 43 |
| Darby | 6 | 6 | 1 | 30 | | 43 |
| Ennis | 6 | 6 | 1 | 30 | | 43 |
| Drummond | 6 | 6 | 1 | 30 | | 43 |
| East Glacier | 6 | 6 | 1 | 30 | | 43 |
| Roberts | 6 | 6 | 1 | 30 | | 43 |
| Hobson | 6 | 6 | 1 | 30 | | 43 |
| Bearcreek | 6 | 6 | 1 | 30 | | 43 |
| Lewistown | 6 | 4 | 2 | 30 | | 42 |
| Laurel | 6 | 4 | 2 | 30 | | 42 |
| Hardin | 6 | 4 | 2 | 30 | | 42 |
| Harlowton | 6 | 4 | 2 | 30 | | 42 |

| COMMUNITY | STREAM SEGMENT | WATER USE | POPULATION SERVED | SCOPE OF PROJECT | PHASE CONSTR. | TOTAL POINTS |
|---|---|---|---|---|---|---|
| Browning | 6 | 4 | 1 | 30 | | 41 |
| Chester | 6 | 4 | 1 | 30 | | 41 |
| St. Ignatius | 6 | 4 | 1 | 30 | | 41 |
| Hot Springs | 6 | 4 | 1 | 30 | | 41 |
| Valier | 6 | 4 | 1 | 30 | | 41 |
| Brady | 6 | 4 | 1 | 30 | | 41 |
| Judith Gap | 6 | 4 | 1 | 30 | | 41 |
| Rocker | 8 | 2 | 1 | 30 | | 41 |
| Ramsay | 8 | 2 | 1 | 30 | | 41 |
| Sidney | 6 | 2 | 2 | 30 | | 40 |
| Wolf Point | 6 | 2 | 2 | 30 | | 40 |
| Baker | 6 | 2 | 2 | 30 | | 40 |
| Forsyth | 6 | 2 | 2 | 30 | | 40 |
| East Helena | 6 | 2 | 2 | 30 | | 40 |
| Circle | 6 | 2 | 1 | 30 | | 39 |
| Big Sandy | 6 | 2 | 1 | 30 | | 39 |
| Broadus | 6 | 2 | 1 | 30 | | 39 |
| Stanford | 6 | 2 | 1 | 30 | | 39 |
| Denton | 6 | 2 | 1 | 30 | | 39 |
| Richey | 6 | 2 | 1 | 30 | | 39 |
| Gildford | 6 | 2 | 1 | 30 | | 39 |
| Dodson | 6 | 2 | 1 | 30 | | 39 |
| Rocky Boy | 6 | 2 | 1 | 30 | | 39 |
| Deer Lodge City & Prison | 2 | 4 | 2 | 30 | | 38 |
| Malta | 4 | 2 | 2 | 30 | | 38 |
| Warm Springs | 4 | 2 | 2 | 30 | | 38 |
| Fairfield | 2 | 4 | 1 | 30 | | 37 |
| Fromberg | 2 | 4 | 1 | 30 | | 37 |
| Missoula Sewers | 8 | 6 | 2 | 15 | | 31 |
| Whitefish Sewers | 8 | 6 | 2 | 15 | | 31 |
| Kalispell Evergreen | 8 | 6 | 2 | 15 | | 31 |
| Belgrade | 8 | 6 | 1 | 15 | | 30 |
| Lakeside | 8 | 6 | 1 | 15 | | 30 |
| Willow Creek | 8 | 6 | 1 | 15 | | 30 |
| Amsterdam-Churchill | 8 | 6 | 1 | 15 | | 30 |
| Bozeman Sewers | 8 | 4 | 2 | 15 | | 29 |
| Dillon Sewers | 6 | 6 | 2 | 15 | | 29 |
| Plains | 6 | 6 | 2 | 15 | | 29 |
| Troy | 6 | 6 | 2 | 15 | | 29 |
| Livingston Sewers | 6 | 6 | 1 | 15 | | 28 |
| Lolo | 6 | 6 | 1 | 15 | | 28 |
| Sheridan Sewers | 6 | 6 | 1 | 15 | | 28 |
| Ulm | 6 | 6 | 1 | 15 | | 28 |
| Swan Lake | 6 | 6 | 1 | 15 | | 28 |
| Clyde Park | 6 | 6 | 1 | 15 | | 28 |
| Melrose | 6 | 6 | 1 | 15 | | 28 |
| Harrison | 6 | 6 | 1 | 15 | | 28 |
| Martinsdale | 6 | 6 | 1 | 15 | | 28 |
| Basin | 6 | 6 | 1 | 15 | | 28 |

| COMMUNITY | STREAM SEGMENT | WATER USE | POPULATION SERVED | SCOPE OF PROJECT | PHASE CONSTR. | TOTAL POINTS |
|---|---|---|---|---|---|---|
| Great Falls Sewers | 4 | 4 | 3 | 15 | | 26 |
| Butte Sewers | 8 | 2 | 1 | 15 | | 26 |
| Lewistown Sewers | 6 | 4 | 1 | 15 | | 26 |
| Conrad | 6 | 4 | 1 | 15 | | 26 |
| St. Ignatius Sewers | 6 | 4 | 1 | 15 | | 26 |
| Helena Sewers | 6 | 2 | 2 | 15 | | 25 |
| Helena Valley | 6 | 2 | 2 | 15 | | 25 |
| Fort Benton | 6 | 2 | 2 | 15 | | 25 |
| Ashland | 6 | 2 | 2 | 15 | | 25 |
| Lincoln | 2 | 6 | 2 | 15 | | 25 |
| Billings Sewers | 4 | 2 | 3 | 15 | | 24 |
| Miles City Sewers | 6 | 2 | 1 | 15 | | 24 |
| Sidney Sewers | 6 | 2 | 1 | 15 | | 24 |
| Roundup Sewers | 6 | 2 | 1 | 15 | | 24 |
| Stockett | 2 | 6 | 1 | 15 | | 24 |
| Simms | 2 | 6 | 1 | 15 | | 24 |
| Kremlin | 6 | 2 | 1 | 15 | | 24 |
| Geyser | 6 | 2 | 1 | 15 | | 24 |
| Havre Sewers | 4 | 2 | 2 | 15 | | 23 |
| Kalispell Storm Sewers | 8 | 2 | 3 | 10 | | 23 |
| Billings Heights | 4 | 2 | 2 | 15 | | 23 |
| Huntley | 4 | 2 | 1 | 15 | | 22 |
| Gt. Fls. Storm Sewer Sep. | 4 | 4 | 3 | 10 | | 21 |
| Chinook | 6 | 2 | 2 | 10 | | 20 |
| Power-Teton Co. W. Assoc. | 2 | 2 | 1 | 15 | | 20 |
| Cut Bank Water Treatment | 6 | 6 | 2 | 5 | | 19 |

An acceptable application must be submitted within 90 days of notification by the Department.